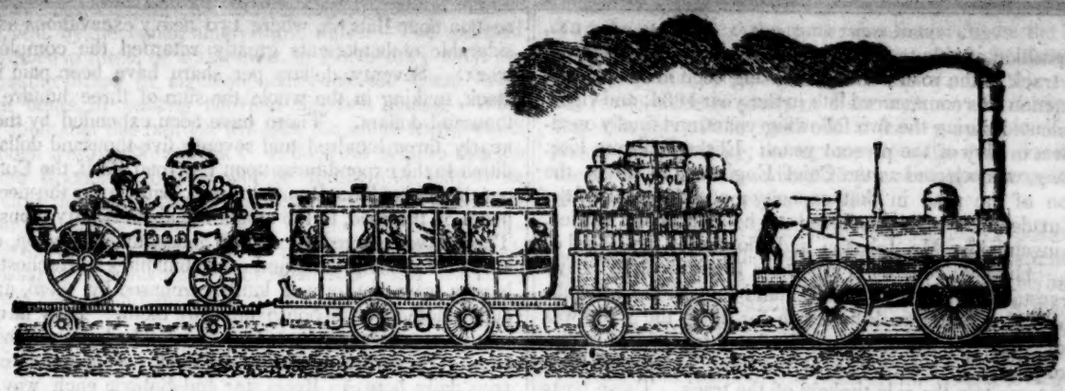

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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D. K. MINOR, and GEORGE C. SCHAEFFER, } EDITORS AND PROPRIETORS.] SATURDAY, AUGUST 5, 1837. VOLUME VI—No. 31

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AMERICAN RAILROAD JOURNAL.

NEW-YORK, AUGUST 5, 1837.

We intended to have completed, in this number, the long article on the "Harbour and Docks at Kingston upon Hull," but have been disappointed in the engravings. It will be concluded in our next.

Tonawanda Railroad; or as it might, we think, more appropriately be called, the *Rochester and Attica* Railroad. We publish in this number the report of a committee to the stockholders of this road. This is one of the several roads, or sections, which are to constitute the great thoroughfare between the Hudson and Lake Erie. That part of the road between Rochester and Batavia has been completed and is now in use. We ask for this report an attentive perusal, as the road has been constructed by, and on the plan of, Mr. Elisha Johnson; in relation to which we published strictures, by Q., in a recent number of the Journal. We have received, from Mr. Johnson, a reply to those strictures, together with the illustrations of his plan of construction, which we shall publish in the number of week after next. It is delayed until then that we may complete in our next number, the long article from "the transactions" on the Hull Docks.

REPORT &c. TO THE BOARD OF DIRECTORS OF THE TONAWANDA RAILROAD COMPANY.

The Committee appointed, at the last meeting of the Board, to report upon the present situation and probable prospects of this corporation and the work in which they are engaged, submit the following statement:—

The Tonawanda Railroad Company was incorporated by an Act of the Legislature of the State of New-York, passed April 24th, 1832. It is authorised "to construct and, during its existence, to maintain and continue a railroad with a single or double track, and with such appendages as may be deemed necessary for the convenient use of the same, commencing at an eligible point within the village of Rochester in the county of Monroe, and extending on the most direct and eligible route, through the valley of the Tonawanda to Attica in the county of Genesee." The duration of this charter is fifty years from the day of its passage. The capital stock is five hundred thousand dollars, divided into shares of one hundred dollars each. The charter is, perhaps, one of the most favorable railroad charters in this State—favorable from its duration, and from its entire freedom from any restrictions as to carrying produce, or the price for carrying produce or passengers. The books for subscription to the capital stock of this company, were opened by the Commissioners appointed under the charter, on the fourteenth day of August, 1833; and, on that day, the whole of the capital stock was taken by ninety-six subscribers. No effort was made to procure subscriptions to the capital stock, from abroad. Individuals residing in the section of country in which it was contemplated the road would be located, knowing the importance and feeling confident of the success of the enterprise, determined to take the whole hazard of the experiment upon themselves. They justly thought that they could furnish no better evidence to distant capitalists, whose aid they might want, of the value of the stock, than by such manifestation of their own confidence in it; and it is worthy of remark, that this whole stock was readily taken in a single day, and after a very short notice, by persons who had the best opportunities of knowing its value, from a residence in the immediate vicinity of the work.

Immediately after the distribution of the stock and the election of the first Board of Directors, Engineers of skill and experience were employed to survey and report upon the most eligible route upon which the track of the company's road should be constructed. As the line of the road was not defined, in the charter, with any particularity, a wide and ample field was left open for the selection of the most advantageous route. This gave rise to the necessity of several surveys and estimates, and furnished ground for some differences of opinion as to the proper route; but after the reports and estimates of the different Engineers were carefully examined by the Board, the line of the route was finally settled in

Sept. ... preparations were made at once, after this, for the acquisition of title to the necessary lands for the construction of the track of the road; and, this having been accomplished, the construction was commenced late in the year 1834, and vigorously prosecuted during the two following years, and finally opened to Batavia in May of the present year. Elisha Johnson, Esq. of Rochester, was selected as the Chief Engineer, to direct the construction of the road in that capacity; and the track of the road was made upon a plan believed to be heretofore untried, which was invented by Mr. Johnson, and adopted by the Board of Directors. His plan consists in making a frame work of heavy timber to sustain the grade of the road and support the embankments, upon which frame work the earth for filling the grade was transported. Large posts of twenty four or thirty inches in diameter, were placed upon each side of the track, opposite to each other, so as to sustain the side timbers of the track. These posts were permitted to enter the earth so as to stand firm upon the hard ground, and were squared at the top. Each of these sets of posts was about ten feet apart. Upon the top of these posts, were laid transversely sticks of timber twelve or fifteen inches in diameter, morticed on the upper side, near each end, so as to receive the longitudinal timbers. The longitudinal timbers—being from sixteen to twenty inches in diameter, smoothed only upon the upper sides, and intended for the support of each of the rails—were let into the mortices of the transverse timbers, and supported by them and the posts. This, where an embankment was to be made, presented a substantial frame work of the proper grade. Upon the top of the longitudinal timbers, proper wooden ribands, as a substitute for iron rails, were laid. Railroad cars were provided to carry earth, with four different boxes each, turning upon hinges attached to the car frame so as to discharge the earth both between the rails and over the outside of each rail. These cars were loaded with earth at places where excavations were necessary, and transported by horses upon the railroad track, and emptied, without any delay, to make the embankment. The same frame work of timber, with the exception of the posts, was laid where excavations were to be made. When the road was finally prepared for operation, pine scantling, of the usual dimensions, was laid upon the longitudinal timbers, and the iron-plate rail upon the scantling, and all securely nailed together by heavy spikes seven inches long.

We have reason, from experience, to be very much gratified with this plan of construction, as simple, economical, and durable; and we cannot but feel very much indebted to Mr. Johnson, the Engineer, for the ingenuity manifested in its successful application. In a country like ours, abounding with timber, it seems peculiarly applicable. The removing of the earth upon the railroad itself, was a great saving in the expense of teams; and the facility and ease with which it could thus be transported considerable distances, caused the excavations and embankments both to be made with an expense very little enhanced from what either would have cost, if made in the usual mode. The whole timber work, with the exception of the pine scantling, is covered with earth, which will prevent it from speedily going to decay; and as the frame work and embankments mutually support each other, it must add materially to the strength of the road. Much of this road has stood the test of two winters and has exhibited the effects of frost much less than the common wood roads; and we are satisfied, from this experiment, that the plan adopted is preferable to that of any road not made of more durable materials. The same experience has enabled us to pronounce, with great confidence, that the yearly expense of repairs will be much less than upon other roads, while the danger arising from cars running off the track, is much diminished, by the fact that it will, in such case, have a smooth road of earth to run upon, unobstructed by any cross timbers above ground.

The construction of the road was commenced at Rochester and finished through to Batavia, so as to be put in operation for the whole length of the line between those two places, in the month of May last. The length of the road is a fraction over thirty-one and a half miles. The line of the road is nearly straight, so nearly so that the track of the road between the two places, is shorter in length than any travelled road which was before used for communication between the two points. There are but few curves in the road, and those are so slight as to be scarcely perceptible. The average ascent is about twelve feet to the mile. The grade has been of comparatively easy construction, except in the section near Batavia, where two heavy excavations and two considerable embankments greatly retarded the completion of the work. Seventy dollars per share have been paid in upon the stock, making in the whole the sum of three hundred and fifty thousand dollars. There have been expended by the Company, nearly three hundred and seventy five thousand dollars. In addition to the expenditures upon the road itself, the Company have purchased lands in Rochester and Batavia for the necessary purposes of the road, to the amount of about twenty thousand dollars. They have erected an engine house, machine shop, car houses, shops for making cars, and other buildings in Rochester. They have a ware house upon lands purchased by them, and also occupy another ware house hired by them. They have two locomotive engines, ten passenger cars, and a large number of freight cars. Since the opening of the road, the loco-motives make two trips daily between Rochester and Batavia each way, with passengers and freight. The passenger and freight cars were made in the Company's shops. In their shops are also now manufactured wheels, springs, and other articles for furnishing railroads; and it is not improbable that this Company will hereafter manufacture all such articles for railroads west of us.

Your committee have endeavored to make an accurate estimate of the cost of the railroad, so far it has been constructed. It is impossible to be absolutely precise; but the whole expense of acquiring title to land for the road, and of constructing the railway and fixtures thereon, is something less than ten thousand dollars per mile. Though this amount exceeds the original estimate of expense, yet the road has been constructed in a much more permanent manner than was originally contemplated; and when we compare with the cost of other roads, we have much reason to be satisfied with the result. A careful examination of the road since its completion, and attention to its construction while it was in progress, united to the testimony of the Engineers who run it, as well as witnessing ourselves its operation, enable us to report with confidence, that the road is well and substantially constructed upon an improved plan, calculated to last for years without any considerable expense for repairs, and runs as well, as easily, and as safely as any other road we have ever examined. Thus much we have thought proper to say in relation to the *present* situation of the road.

It is to be regretted that the name adopted for this corporation, is not more significant of the locality of the road. It is now utterly impossible for any person not acquainted with, or informed of, the locality of the road, to acquire from the name of the corporation any idea of the part of the country in which it is situated, or the towns through which it passes. The name of a railroad should be significant of its route, so as to convey a distinct and correct idea by its name alone. This, unfortunately, is not the case with ours, which renders it necessary to explain for the information of those unacquainted with its location. The Tonawanda Railroad commences at the city of Rochester, on the Genesee river, and runs almost in a straight line from that place to Batavia, a distance of nearly thirty-two miles, to which place it is completed, and is now in daily operation with locomotive engines. A glance at the map of western New-York, will show the importance of the route. The entire travel which throngs through the western part of the State of New-York, now either passes through Rochester, by the canal or stage, on one route, or through Le Roy and Batavia, by stage, on another route still farther south. This railroad passes from an important point on one route to an important point on the other, and connects the two. It must, consequently, by reason of additional speed, secure the travel of both. Again: this railroad is a connecting link in the great chain of railroads from Albany to Buffalo, completed now from Albany to Utica, in progress of completion from Utica to Auburn, and now being surveyed from Auburn to Rochester where the Tonawanda Railroad commences. Charters have been granted and arrangements made for filling up the entire line from the Hudson to the Lakes, with railroads, in a very short time; of which the Tonawanda Railroad constitutes a necessary and essential link. The land has been purchased and the route surveyed for a railroad from Batavia to Buffalo, and the work will be soon commenced. This is a straight line for the whole distance, and the descent is uniform and does not average more than eight feet to the mile. When this is completed, the whole line from Rochester to Buffalo will be nearly straight, and the distance less than sixty-seven miles; while the distance between the two places, by the present travelled road, is seventy-

four miles, and, by the canal, ninety-three miles. The railroad can be traversed in three, or at the most. in four hours; while the stages consume fifteen or eighteen hours, and the canal boats twenty-four hours, in passing between the two places. Who, then, can doubt that this railroad will take the entire travel which passes through western New-York? It does not require that the Auburn and Rochester road should be finished, to reap these fruits. Before the completion of that work, all the travellers westward, either by stage on either route, by the canal, or by lake Ontario whose steamboats touch at the port of Rochester, will almost necessarily take this railroad at Rochester; and travellers eastward will also avail themselves of it. And how great is the amount of that travel? See the numbers thronging the railroad cars on the Utica road, the numbers crowding the stages and canal boats farther west, and the numbers daily landed from the lake Erie steamboats at Buffalo, and we can begin to have some idea of the amount of travel through this section of country. We have hardly sufficient data for calculating the precise number of persons thus transported each way, but we can approximate to it. There are, we think, on the roads running from Rochester through Palmyra, from Rochester through Canandaigua, and from Canandaigua through Le Roy and Batavia, no less than sixteen daily lines of stages, computing those which run each way. In the travelling season, these are generally full, and many extras are put in requisition every week. On the Erie canal which passes through Rochester, there are three daily lines of eastern packet boats which arrive and depart three times every day, besides the vast number of line boats, many of which carry as many passengers as the packet boats. The steamboats on lake Ontario touch at Rochester on their trips, and leave some passengers. A great majority of those travellers, except emigrants, will almost necessarily take the railroad; and it has been computed, and we believe the estimate is not over the mark, that in a season of busy travelling, from eight hundred to one thousand persons pass daily through the country by these different conveyances, or from four to five hundred each way. To fortify the computation, we have seen it stated repeatedly in the prints of Buffalo, where all the above routes end, that an average of about one thousand persons passed through that place daily, during the travelling season last summer. From returns kept at the Canal Collector's office at Little Falls in 1835, it appears that seventy-six thousand four hundred and sixty-three passengers passed that office on the canal (which is but one mode of travelling) in that year. The statistics of the Utica and Schenectady railroad show an average of about five hundred persons passing over that road daily. This result brings us as nearly to an accurate estimate, perhaps, as any other, for we are satisfied, from observation, that full as many travellers pass through Buffalo, upon an average, as through Utica. The diminution occasioned by leaving the route at or west of Utica, is about compensated by acquisitions from lake Ontario and the north, and from more southern routes and local travel.

From calculations drawn from all these facts, and after making deductions for emigrants who will continue to travel in a great measure upon the canal, we think we are not too sanguine in assuming that, after the railroad shall be completed to Buffalo, from four to five hundred persons will pass over the railroad from Rochester to Buffalo daily, during the travelling season of the year; The price of passage from Rochester to Batavia, is $1 50; from Rochester to Buffalo it will be $3 00. As the whole road will be run, it is contemplated, under a single arrangement with one set of cars and locomotives, the expense of running cannot be very considerable, not greater certainly than that of the Utica and Schenectady road, while the yearly expenses of repairs to the road itself, we are also satisfied by experience, will be greatly less than is common upon wooden roads. The cost of constructing the entire road and finishing it fully, with cars, locomotives, depots, &c., cannot exceed the sum of $700,000. A slight calculation from the above data, will show how great must be the income, even after making every allowance for expenses. If we suppose the receipts to be $1,000 per day (which is less than the above estimate would warrant) for two hundred and forty days, it would give for receipts, $240,000. If we suppose the expenses to be $200 per day for the same time, (which is much greater than our present expenses would justify,) it would give for our expenses, $48,000, and the balance or profit would be nearly $200,000, which, upon a capital of $700,000, would be nearly 30 per cent. The construction of the track from Batavia upon the Tonawanda creek to Attica, twelve miles, will cost about $100,000, and will, of course, add that amount to the capital. As this extends into the fertile country south of Batavia, it may be fairly considered that this part of the road will at least support itself. But if it should yield nothing, the income from the main track will be, by the above calculation, about 25 per cent. upon a capital of $800,000, and this for passengers alone.

The Company, in addition to the carrying of passengers, have no restriction upon the carrying of produce and merchandize upon their road. Indeed, this was considered one of the important objects both to the stockholders and the country. A glance again at the map of western New-York, will show the importance of the road in this respect. We can see, by such inspection, that the railroad from Rochester to Batavia and Attica, diverges from the canal, and passes through the most fertile and productive of the wheat-growing regions of this State. The various and abundant produce of all this region, has heretofore been transported by teams to different points on the canal. The wheat from the different towns and the flour from the numerous mills in this section, has been carried on in this way to Albion, Holley, and Brockport. The merchandize for the supply of this wealthy and populous section of the State, has in like manner been transported from these different points on the canal, to the several towns and villages in this region. It is now apparent that all the produce of the rich towns through which the railroad passes, and of the fertile towns south of the railroad, will seek the railroad as a mode of conveyance, and by it be transported to the canal at Rochester. It is equally evident that the merchandize destined for this whole region, will be received from the canal at Rochester, and delivered upon the railroad to points nearest the places of destination. The facility and economy of transportion upon the railroad, forbids any competition from teams; and the delivery of the produce and the receipt of the merchandize upon the canal, at a point nearer to the tide waters, increases this advantage. The amount of this branch of business, is hardly susceptible of computation. The business of this kind done upon the road last fall, when it was only in partial operation, show that it must be very large, and will require at least one hundred freight cars to perform it, drawn by locomotives. The towns thus within the influence of the railroad, are known to be among the most productive of our wheat growing towns; and a calculation made with care, predicated upon the crops of two or three years, show an average yearly amount of crops from those towns, of nearly fifteen hundred thousand bushels of wheat. All this amount not wanted for consumption at home or for sowing, must find its way to Rochester upon the railroad, either in the shape of wheat or flour. The other produce of this region, the smaller grains, the pork, the ashes, and the lumber, must seek the same mode of conveyance to market.—The merchandize, the salt, the iron for this same region, must also be transported into the country by this same mode of conveyance from Rochester. A computation of the amount of business transacted at the different mercantile establishments in this section, will give an aggregate freight, of this kind alone, of more than ten thousand tons annually. When we reflect that the city of Rochester contains now eighteen thousand inhabitants, that part of the county of Monroe west of the Genesee river more than thirty thousand, and the county of Genesee more than sixty thousand inhabitants, all imbued with the spirit of enterprise and cultivating a fertile soil, the magnitude of this domestic or local business will appear in its true light. The transportation of produce and merchandise is attended with considerable expense of labor in the handling; but the rates of freight charged are such as, from the last year's experience, we find leaves the Company a reasonable profit, and such as to make it no inconsiderable object to transact this species of business. It will at any rate, aid in defraying, if it does not quite defray, the expenses of the passenger trains, and leave almost the entire income from passengers, a clear profit.

In conculsion, your committee cannot but congratulate the Board upon the flattering prospects which their enterprise—so boldly undertaken and so nearly completed—holds out. The expense of construction being only one half the expense of the construction of other roads not more permanent, the probable expense of repairs being greatly less, and the probable income being equal to other roads of double the capital, this work must afford dividends which will amply remunerate the stockholders for their en-

terprise, and handsomely repay capitalists who may make investments in its stock.

F. WHITTLESEY,
DAVID SCOTT,
JONATHAN CHILD,
} Committee.

Dated June 16, 1837.

APPENDIX.

PRESENT OFFICERS OF THE TONAWANDA RAILROAD COMPANY.

DIRECTORS.

David E. Evans,	David Scott,
Trumbull Cary,	James Brisban,
George W. Lay,	Daniel H. Chandler.
Abraham M. Schermerhorn,	Jonathan Child,
Frederick Bushnall,	Frederick Whittlesey,
Thomas Kempshall.	Joshua Lathrop.

DAVID E. EVANS, President,
JONATHAN CHILD, Vice-President,
ABRAHAM M. SCHERMERHORN, Treasurer,
FREDERICK WHITTLESEY, Secretary,
DAVID SCOTT, Superintendent.

The present number of Stockholders in said Company, is sixty.

From the Illinois Journal.

BOARD OF PUBLIC WORK'S REPORT.

To the Governor of the State of Illinois

STATE OF ILLINOIS,
VANDALIA, JUNE 5, 1837.

SIR,—The undersigned, Commissioners of the Board of Public Works, in obedience to the law of the last session, entitled "An act to establish and maintain a general system of internal improvements," have the honor to lay before the Governor a report of the proceedings had by them under the provisions of the said act.

At their first meeting in April last, the Board was organized by the unanimous choice of WILLIAM KINNEY, commissioner of the second judicial circuit, as President of the Board, and by the appointment of GEO. W. CARRUTHERS, as Secretary.

The several proceedings of the Board in the adoption and organization of a plan for the conducting of the system of improvements upon the comprehensive scale contemplated by the bill, and extending over so many different portions of our State, will accompany this report. The plan adopted by the Board was the best that could be devised by it; and although it is not without its objections, it is believed that no better system could conveniently have been presented for the purpose, if the number and extent of the works to be surveyed and prosecuted shall be properly considered.

The short period which has elapsed since the organization of the Board, and the difficulty which presented in the outset of obtaining competent engineers, and the necessary instruments for their use, will in some degree account for a want of interest in the present report.

Soon after the adjournment of the Legislature, JAMES BUCKLIN, Esq. by the private aid of some of our citizens, who felt an interest in the progress of the system, was employed to proceed to some of the eastern cities, for the purpose of procuring the necessary instruments, for four engineering parties; and since his return the surveys of several of the roads directed by the act have been commenced.

The Northern cross railroad and the road from Mount Carmel to Alton, and also the Central railroad at two different points, have already been placed under survey.

It was the intention of the Board to have placed an additional engineer upon the Central railroad, at its northern termination; but contrary to the promises which were held out to the Board at its first meeting, it is found upon making inquiry at the office of the Secretary of State that the relinquishment of the charter granted to the corporation of the Central Railroad Company has not been filed; consequently it becomes the duty of the Board to cease all further operations upon this important improvement. The delay which has occurred in the relinquishment of this charter, renders it somewhat doubtful whether any such relinquishment will be made, must of course be the occasion of regret to all those who desire the prosperity of the State, and who wish to witness a developement of its resources, since it is evident that a work of the magnitude of the road under consideration could not, under the present aspect of affairs, be prosecuted with any reasonable certainty of a speedy completion by the means of a private company. The prosperity of a large portion of our State is intimately blended with this work which was designed to be a great artery for the distribution and extension of all those important benefits which result from a continuous and easy line of communication from the extremities of the State; and it is therefore with regret that the undersigned feel constrained to divert that attention from this work which they were equally urged by inclination and duty to bestow upon it.

The Board has also been embarrassed in its proceedings, from the delay which has transpired in the relinquishment of other charters; and this delay will be more severely injurious as the surveys proceed, since it may be necessary to retain Engineers in the employ of the State to await the tardy action of those interested in their respective charters. In the number of these the Board will include the Alton and Shawneetown railroad. It would seem that some of the inhabitants interested in this road are exceedingly eager to witness a survey of it, and are complaining of a want of diligence and attention on the part of the Board; while it was impossible for the Board to proceed until the stockholders shall have relinquished their charter.

There are already five engineering parties in the field actively employed; and it is confidently expected that there will be six additional parties soon in active operation which will in the course of the ensuing season enable the undersigned to complete the surveys of a greater proportion if not all the railroads provided for in the law. Every exertion will be made to proceed with the survey of all the roads with a due regard to utility and economy, and since it was impossible ever to close the survey of any of the roads unless a commencement should be made upon some of them, and since no particular preference to any could be given, without incurring censure from the persons interested in the prosecution of other roads, the undersigned commenced upon such of them as from their importance coupled with the extent, and greater facilities for a speedy commencement upon them would in their estimation best advance the general interests of the State. It is the intention of the Board to proceed as speedily as a prudent regard to circumstances will permit in the survey of the roads and rivers, and they will in all probability have portions of all of them ready to be placed under contract, as soon as, if not before, the Fund Commissioners will have provided sufficient means for that purpose.

The pecuniary distress which prevails in the other States, and the present inauspicious prospect before them, will doubtless induce a large number of emigrants to seek a home in this State; so fertile in soil, so salubrious in climate, and holding out to the industrious and enterprising the most encouraging promises of happiness and prosperity.

The certainty that we shall have a large and valuable accession to our population next ensuing, from the knowledge that our State is unembarrassed, and that loans will in due time be effected, to prosecute our several works of improvement; the employment these will afford, with the stimulus which they will necessarily give to agricultural industry, will be a sure means of advancing the prosperity of all classes of our citizens, and consequently of placing our State upon that exalted eminence among her sisters of the Union, which her many superior advantages entitle her to claim.

The embarrassment which is felt in most of the eastern and southern States, has not yet been visited upon this State. The limited banking capital of this State has prevented an accumulation of indebtedness; the value of our lands has heretofore induced large investments of eastern capital which has generally resulted for the benefit of our citizens, and there has been comparatively but little over-trading in our commercial community: consequently that dependency, which is hanging over other States, is not seriously felt in this; therefore we may reasonably gather confidence that in our several public works shall be prosecuted with zeal, that the evils which are mourned over in the older States, will work to our good, and produce permanent and salutary benefit to Illinois, and though we may lament the wreck of and ruin we could not avert, we are not to be censured because circumstances render it necessary that we should profit by the distress of others.

Owing to the recent organization of the several engineer-

parties, and to the incomplete arrangements for those about to take the field, and to their remoteness from the respective commissioners, the Board regret that they cannot show specifically the amount expended by the different members of the Board, up to the present date; but before their nex semi-annual report, such an organization will have been made, as will render it more easy to comply with the requisitions of the law in this behalf, as nearly as can be ascertained from the posts of the respective Commissioners' up to the period that they left their respective circuits to attend the present meeting; the entire amount expended did not exceed seven thousand dollars, but the expenditure for the ensuing months, including camp equipage and equipments, and the compensation of the additional engineers and their parties, will necessarily exceed that of the past. Notwithstanding which, from the information obtained from the Fund Commissioners, the Board of Public Works is confident that with a due regard to economy sufficient means will be provided to ensure a successful prosecution of the several improvements contemplated by law, and so ardently desired by the people.

Signed

WM. KINNEY,
M. MC CONNE
E. WILLARD, LL,
M. K. ALEXANDER,
J. WRIGHT,
E. PECK.

Vandalia, June 6th, 1837.

From the New-York Mechanics' Magazine.

Sir,—I see in your No of the 1st inst. an article from the London Mechanics' Magazine, relative to the discovery of M. Ganal, of Paris, for the preservation of dead bodies and the study of anatomy in summer as well as in winter time. Allow me to correct the assertions of the writer.

Two years ago M. Ganal submitted to the Roval Academy of Medicine in Paris, a preparation of his for the preservation of dead bodies to facilitate the researches of anatomy. I have seen at the Hotel-Dieu, bodies that had already been kept for nearly five months, without the least decomposition, while the limbs and flesh retained the same elasticity, which they had immediately after death had occurred.

The body taken out of the compound could be placed upon the table, ready for the scalpel, and could again be placed in the compound to be retained for future dissection. In this case the compound should always be weakened.

The preparation is very simple, consisting of different substances in certain proportions—and the cost is very small, 16 pence being sufficient for the preservation of a human body.

But *it is not injected into the veins* nor *into the carotid artery* as the English Journal asserts. If indeed, this were the case would not the scalpel release the fluid, and then what would become of its virtues.

Not long ago a man by the name of Tarquinia, I believe, physician in ordinary to the King of Naples, discovered a mode of preservation, and M. Ganal may have been induced to make some further experiments upon the preservation of anatomical specimens for *museums*, but this discovery must not be comfounded with the other.

The process of the Neapolitan Doctor consists only of arsenic dissolved in water, in the proportion of 2 pounds for a human body, and injected into the arteries by a small pump. This process however, has been found deficient, the body undergoing no apparent alteration for 5 or 6 months, but after that time it becomes very hard and dry, the skin turns yellow, and in less than a year it is converted into a complete mummy.

Of the last process of M. Ganal I know nothing, but I am confident that it has nothing to do with his other method, useful both for the preservation of subjects in the amphitheatre, and for their transportation to a distance for the purpose of dissection.

AN AMATEUR.

From teh New-York Farmer.

MANAGEMENT OF SHEEP.

No. V.

Messrs. Editors.—In my last communication I endeavored to maintain, that in cleansing and putting wool in the best condition for market—*honesty* and *interest went hand in hand.*

The proposition was fully demonstrated so far as my experience has carried me. I shall not now add further proofs, but merely make one or two more suggestions in regard to making use of *vats* for washing of sheep.

I could fill my sheet, if it was necessary, with affidavits of my neighbors maintaining the vast superiority of vats over pools, or in fact, any other mode in use.

There are few streams but that afford a needful supply of water, and also a sufficient fall. Where the latter is *not* the case, it is only necessary to excavate a place near, or on the margin of the brook, sufficiently large for the admission of the vat and platform. A fall of three or four feet is of the greatest consequence, as without it, it is impossible to gain the full advantage to be derived from vats. I mentioned in my last, that it was my practice to have my sheep, first soaked, (as we wool growers call it,) after which, they are removed under the spouts, and the water falling, the above mentioned distance, separates the dirt more effectually, and in a much shorter time than it can possibly be done by *squeezing*. A fact, it is out of the question to get wool white and clean by squeezing, unless a much longer time is taken than usual, and after the greatest pains, its aspect is dingy.

But, believing that those of your readers who are practical farmers, can readily appreciate the *vat system* without any further efforts of mine, I will only say a word or two as regards expense of construction. I have already stated that the cost of mine, including platforms and all other appendages, was only seven dollars. Now I will recommend, if so small an expense will deter any individual, that some half dozen farmers, or more, *club* and fix on some eligible site, and each contribute his pro rata of expense.

My neighbors, have, for years past, brought their flocks to my place for washing:—I charge them nothing—they are perfectly welcome—and happy am I, that I am instrumental in putting them in the way of doing the *clean thing*.

In exposing the slovenly practices of our farmers relative to shearing of sheep, and matters connected therewith, want of time will compel me to be brief.

Generally speaking, shearers are too much in haste to get off the fleece; and, hence, as my honest neighbor Ben. Rogers says, "they not only take off wool, but enough of hide with it for moderate sized leather apron." This is wrong—it is cruel:—but arises altogether from haste and carelessness. There are shearers, who will shear from 50 to 80 sheep per day—such however, are rarely found:—in general, no man can shear beyond 30 or 40, and perform his work as it should be.

There is an inhuman practice of shearers, which every wool grower ought to discountenance and correct—if it was not so common I would not allude to it—and that is, of *cuffing* and *kicking* sheep to *make them lay still* when shearing. Those who are acquainted with *my ways* know better than to exercise this foolish and brutal spite thus.

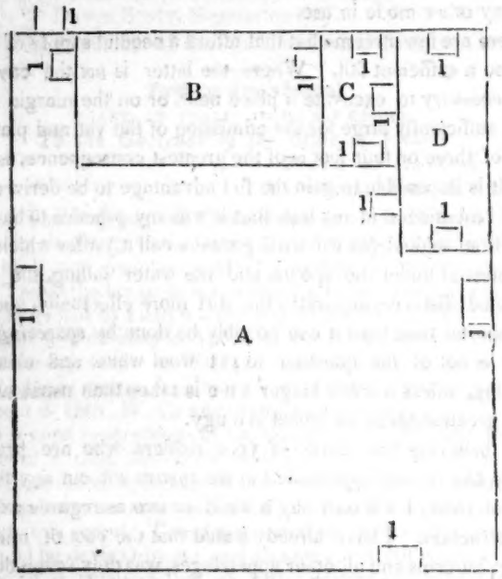
It is almost universally the case in this quarter, that, in putting up a fleece, a band is twisted of wool to bind and secure it. I can inform those who do this, that manufacturers do not approve of it; and, for the reason, that it causes much trouble to the sapho in untwisting and separating the different qualities of wool, of which the band may consist. The best way is to secure the fleece with twine.

Connected with the subject of shearing, pounding or yarding sheep is suggested to my mind.

Nine times in ten, when ready for shearing, a temporary yard is built of rails or poles, for the reception of the flock, which is *always too* small, and of course the poor animals are almost suffocated:—losses have indeed, occurred in this way. But this is not all:—when so many are confined, much filth accumulates, which, readily, finds its way on the floor of the shearer, and *some how* is very apt to go still farther, viz: *inside of the fleece.*

I experienced many of the evils attendant upon pounding sheep, in the usual way for a length of time:—but a number of years since were obviated by the erection of a shearing house, with all the necessary pounds, which are constructed of posts and boards, and of course, firm and durable.

I herewith, Messrs. Editors, present you with the outlines of the whole with the necessary explanations. I do not doubt but there are many whose establishments of the kind are superior—if so, I am glad of it. But to those who are not provided with any, I can recommend my own plan as affording not only great ease and facility in yarding of sheep, but every other convenience desirable.



A Large yard, some 30 rods square.
B Large pound, 50 feet by 15 feet.
C Small pound, 15 feet square.
D Shearing house, 36 feet by 18 feet—14 feet posts.
1 Represents gates and doors.

Pound B is amply large for 400 sheep:—the small one C, has abundance of room for 80, but when shearing, I never permit more than half that number to remain in it:—the residue of the flock are let out to roam in the large yard A. Nothing is permitted to run in this yard previous to shearing, which is at all times thickly covered with grass, and consequently, is a very suitable plan for sheep to lay down upon. The small pound as Ben. Rogers says "is a *great thing*, as you need'nt run all over creation to catch a sheep."

My wool is stored in the second loft, in the floor of which is fixed a trap door, and from this is suspended the sacks when packing.

I close this communication, now, with regret, as much else could be added in reference to shearing, &c., of sheep—but my sheet is full. Yours,

Lansing, Tompkins Co., N. Y. M.

From the New-York Farmer.

KEY WEST, Tropical Florida, 12th July, 1837.

DEAR SIR. On the 28th ult., I addressed you a few lines with a circular from the President of the Agricultural Society of Louisiana. The bearer of that letter was A. A. M. Jackson, Esq., Clerk of the U. S. District Court whose address, while in your City, will be at 273 East Broadway. Wm. A. Whitehead, Esq., the Collector of this port will carry the present brief communication, and his address during the summer will be at Perth Amboy, New Jersey. Having now been twenty-five days on this Inlet, during the worst season of the year, I can declare that I have been agreeably disappointed in the character of its surface, of its climate, and of its inhabitants. I had anticipated a barren bank of sand, but found a verdant woods on a limestone base. I expected to meet with stagnant ponds of putrefying materials exhaling pestilence and death, I find running inlets of the sea as pure as the waters of the deep ocean itself, which are sources both of health and wealth. I was told that the moschitos and sand-flies were so numerous that the inhabitants could scarcely breath without swallowing mouthfuls of these insects; but of sand-flies I have not yet seen or felt a single swarm, and of moschitos I can truly say that of these are never more than I have seen or felt during this worst season for them. Key West may challenge comparison with any equal surface on our coast, from New-York to New Orleans. But as I have not taken up my pen to give a detailed description or history of this Island, I will be as brief as possible in what I have to say. The whole Island, including the salt pond, contains only 1975 acres. The salt pond has a surface of 340 acres. The town at the N. W. extremity of the Island is in 24° 25′ N. L. and 82° 04′ W. Long. The subsoil of the Island is limestone, (not coral rocks,) and the soil a calcareous powder, (not siliceous sand,) colored by vegetable mould. This soil is said to be exhausted by two or three years exposure to the sun, so that garden vegetables are no longer cultivated. Sweet potatoes, however, and pumpkins continue to be very productive. Siliceous sand and clay would be very valuable here, as even the quantity requisite for masonry has to be brought from great distances on the mainland. But the greatest defect on this Island is the want of water. The rains are so few and so little, that they do not suffice for agriculture, and the wells do not furnish either the quantity or quality of water necessary for artificial irrigation. Nevertheless the vegetable growth on this Key demonstrates that there are valuable vegetables adapted to flourish in even this moreland soil and atmosphere. I therefore annex a brief list of the plants both indigenous exotic that have already fallen under my observation.

Indigenous.—The wild fig, the manchineel, the Campeachy teak or Jamaica dog-wood, the Gumbolembo or Almacigo, the nickernuts, 5 species of Cactus, the wild Papaya and it is said the Salinwood tree, &c., &c. I will give the botanical names in my next.

Exotic.—*Terminalia Catappa*, (or Indian Almond,) the *poinciana pulcherrima*, (or Chansiquin of Campeachy,) the *moringa pterigosperma*, (or oil of ben tree,) *Serbania picta*, (or Guacamaya,) *Cicca racemosa*, (or Gooseberry tree,) red Mulberry, wild lime, monœcious Papaya, Pride of China or India, the W. I. Tamarind and the Cocoa-nut palm.

The Cordia sebestena is by some said to be indigenous and by others exotic. But as I have arrived at the bottom of my page, I close for the present by subscribing myself very respectfully your ob't ser't,

HENRY PERRINE.

USEFUL EDUCATION.—The following excellent article from the Cultivator upon useful education should be read by every parent. It should be printed in letters of gold and be born constantly in mind by those who have the charge of children.

WHAT IS A USEFUL EDUCATION?

We put the question in reference to the great body of American outh, who are to earn their bread by the sweat of their brows, and, under Providence, to wield the future destinies of our country. Two principles should govern: *Teach them* TO PROVIDE FOR THEMSELVES HONORABLY, under any ordinary contingencies,—*and qualify them to become* USEFUL TO SOEIETY. The times, as well as universal experience, abundantly admonish us, that however the children of wealth may indulge in indolence and dissipation—while their means last,—the great mass of American youth must, and ought, to depend upon their labor fo their fort unes and their

usefulness. Fortune is at best precarious; patrimonial dependance is uncertain, and reliance upon the friendship or charity of the world, or upon office, is frail and often debasing. Self-dependance is the only sure stay. *We are ever most willing to help those who help themselves.* Productive labor is the legitimate source of all our wealth, individual and national; and this labor is profitable to the individual and to the nation, *in proportion to the measure of intelligence and scientific knowledge which guide and direct its operations.* Hence it is of primary importance, that our youth should be efficiently taught to labor, and that their minds should be early imbued with that kind of knowledge which will instruct them in the principles of their business, render it honorable, and make them independent in conduct and in fortune.

We have, to be sure, colleges and academies in abundance, more than can be well supported, or that can be made economical and useful. But these are in a measure consecrated to the learned professions—to the privileged few—for they are privileged, inasmuch as they are the exclusive recipients of public bounty in the higher branches of learning. Productive labor derives little or no advantage from their teachings. Few of the youth who enter their halls ever seek for a livelihood in the laboring arts. They learn to look upon labor, as servile and demeaning, and to seek their level in what they consider the *higher classes* of society. They do not go to these schools to *learn to work*, or to *learn to live by work*,—in the common meaning of these terms—but to *learn to live without work—above work.* They are virtually withdrawn from the producing classes. These young aspirants flock to the learned professions, and the genteel employments, as the avenues to honors and office; and notwithstanding that labor is taxed heavily, in one way or another, to supply their real or imaginary wants, yet the *genteel* professions have become so overstocked, and the threshold of power so thronged with supplicants, that hundreds and thousands are thrown back, as parasites upon society, exhibiting the melancholy spectacle of men, born to be useful, but unable, or unwilling, from the bias of a wrong education, to become so. Had these men been taught to look upon labor, as it truly is, a necessary, healthful, independent, and honorable employment, *and been instructed in its principles and its practice*, while young, they would have cherished its interests, respected its virtues, and cheerfully shared in its toils and its pleasures. We seek not, by these remarks, to pull down that which is, but to build up that which is not. It is not that we love a part less, but the whole more. We would raise the standard of labor, without depressing that of literature.

We have common schools too, munificently endowed, where all may acquire the *rudiments* of knowledge, but the rudiments only. They teach nothing of the sciences which are necessary to the successful prosecution of the arts—and give no instructions in the best models of practice. They neither learn the boy how to provide for himself, nor fit him for extensive usefulness. They lay the foundation, but they do little to build up and beautify the temple.

We find in the London and Westminster Quarterly, in an article on the means of lessening the evils of pauperism, some very apposite remarks upon this subject, which we here transcribe:

"We advocate," says the Review, "both for England and Ireland, the necessity of a national provision for the moral and industrial training of the young. In the old we cannot hope for much improvement. But the new generation springing up might be modelled to our will. Schools are wanted; but not such as are now spreading over the country, to teach a little reading and writing, as if that embraced the whole business of life, and the whole duty of man—schools in which both boys and girls should learn to employ both their heads and their hands—in which they should be taught practically the use of various tools, and in which such general information should be imparted, relating to different branches of industry, (the rights and duties of citizens,) and the resources of other countries and their own, as would enable them to begin to mount the uphill path they would have to climb in after life, with a heart full of hope, and with a spirit of energy and intelligence which no difficulties would overcome."

Who will tell us why it is, that classic schools, available only to those who design to live without labor, are made the special and exclusive objects of legislative bounty, in regard to the higher branches of instruction? Why is it, that six or seven thousand youths, which is about the number in our colleges and academies, should receive gratuities from the public treasury, till the aggregate exceeds three millions of dollars, to enable to live without work, while half a million of other youth, with like capacities and like claims, destined to labor, and to augment the resouces, the wealth and the happiness of their country, are denied a miserable pittance, in the higher branches of knowledge, to qualify them for their more important duties in society? Is not knowledge as beneficial to the arts of labor, as it is to the learned professions? Is it not as efficiently and beneficially applied in developing the riches of the earth, in perfecting the mechanic and manufacturing arts, and in augmenting the products and profits of labor generally, as it is in the warfare of party politics, in the chicanery of the law, and in prolonging unprofitable debate in our legislative halls? May not natural science be as profitably studied and applied on the farm, where nature is constantly presenting new subjects of illustration and appliance, as in the town or in the closet? Is not chemistry, which instructs us in the nature and properties of all bodies, as useful to the farmer, in ascertaining the qualities of his soils, and their adaptation to particular crops, and in regulating the multifarious operations of husbandry,—and to the artizan, in managing his various processes,—as it is to the lawyer, the statesman, or the divine? There is probably no employment in life that embraces so wide a scope of useful study, as that of cultivating the soil. The great use and end of science is to improve art, to impress us with a sense of our obligations to God, and of our duty to man. In truth, science belongs to, and constitutes an integral portion of the arts, and cannot be divorced from them without throwing us back into a state of semi-barbarism, such as now debases a great portion of the population of the old continent. Why then teach science exclusively to the few, who have comparatively so little use for it, and withhold it from the many, to whom it would be a help and a guide?

We look to Europe for precedents, and blindly adopt some that are prejudicial, as well as many that are good. We forget that we are a new people in government, manners and laws, and that there is no country which will serve as our model in all cases. The education bestowed upon the working classes in Europe is designed to qualify them for the subordinate stations in society—for labor and obedience, as *subjects*. There governments recognize a privileged class—who are the owners of the soil, and live upon the labors of the many. The working classes have very little to do with the affairs of government. Here all are professedly upon a footing of equality. All enjoy political rights, and have political duties to perform—and all should be equally favored, so far as the public bounty is dispensed in the means of obtaining useful knowledge, and of acquiring wealth and honors. We should take care to have good farmers and good mechanics, as well as good lawyers and good doctors. We want not only good *subjects*, but intelligent *freemen*—high-minded, independent freemen, "who know their rights, and knowing, dare maintain them." We wish to keep the fountains pure, that the stream of power may not become defiled. We wish to base our political and social fabric upon a rock, steadfast and sure—upon the intelligence, industry and moral rectitude of the great working community. When this class shall cease to exert a healthful and controling influence in political affairs, our boasted freedom will be at an end. A privileged class, whom the bounty of government has assisted to arm with exclusive power, will control and direct the political machine, as may best subserve their aggrandizing views, without regard to the common weal. Ambition is the same in all ages and countries. Man loves power, and is corrupted by it; and in its prolonged exercise, the servant will ever swell into the master. Our freedom can only be securely guarded by the vigilance of an enlightened, independent, prosperous yeomanry.

Men have tried all sorts of expedients, for thousands of years, to obtain wealth and happiness; and after all, it has become pretty evident, that there is no course that wears so well—that is so self-approving—that is so certain in its success; that gives so much health, contentment and independence—the substantial elements of happiness—as habitual industry, tempered and directed by a cultivated mind,—be it in the learned or laboring professions. The consciousness, that we are not only providing for ourselves, and those naturally dependent upon us, but that we are doing good to society, and thereby fulfilling one of our highest moral obligations, is a rich source of enjoyment,

which the indolent and dissipated must ever remain utter strangers.

We say, therefore, that we want schools of moral, industrial and scientific instruction for the working classes of society—that these classes are entitled to them—and that their establishment would conduce alike to the prosperity of the country, and to the perpetuity of our political and religious freedom

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From the Mechanic's Magazine

MR. BURDEN AGAIN.

Nature appears to have invested few individuals with that quantity and kind of intellect which is necessary to invent useful improvements; and the time and study of inventing and perfecting, and often the pecuniary expense of putting them into practice too frequently subject their inventors, though the most useful class of people, to poverty; and ungrateful neglect and cold contempt are often the reward of the person whose talents have conferred more benefit on mankind than could have been effected by the hard labor of thousands or perhaps millions. These circumstances cannot fail to be a subject of regret to a person whose mind is capable of appreciating the value of those services, and it is, therefore, commensurately pleasing to meet with the rare occurrence of an inventor of the first order, who has the talent to command from the public, the remuneration, both in money and respect which is so justly his due.

Such is the individual whose name is at the head of this article, which is not designed so much to gratify his independent mind as to encourage others to imitate his example. When in very moderate pecuniary circumstances, his invention of making wrought iron spikes, which he put in immediate practice rendered his own inspection and for his own emolumen , together with his usually industrious application to business, raised him in a short time, not only above want, but to a handsome degree of independence.

But notwithstanding his necessary attention to an extensive business, he found time to invent and arrange the plan of a boat which he was convinced would effect an important improvement in steam navigation. Instead of making this the subject of stock jobbing and hollow speculation, he determined to test its value at his own cost and risk, though it would incur an expense beyond the ordinary means of a common individual. It was vigorously and soon effected, and on experiment bid fair to realize his strongest anticipations. But an unforeseen disaster, arising from no defect in his boat, in a moment destroyed it and his hopes together. But he had the proud satisfaction, that the disaster involved no one's interest but his own, and that he was able to pocket the loss, without any sacrifice of credit.

In a short time, he astonished the pubic, and even the world, with his machinery for making horse shoes, which in the short space of a few hours, converted a ton of iron in to those articles of very superior quality, and which has, probably, already much more than remunerated his loss, as it is not only supplying his own country with horse shoes, but the invention is already successfully established in actual use in several countries of Europe.

But as the mind is naturally inclined to revert to the source, where it sustained great loss or suffered any severe disaster, the subject of steam navigation, no doubt, presented itself at frequent intervals, in all the shapes which an inventive imagination could suggest. He is now once more before the public with a steamboat on a plan entirely original and differing altogether from his former boat and from any other in operation, and whatever minor defects future experience may discover, it is certainly possessing many and important advantages over any other boat heretofore constructed. It will possess far greater strength than could be obtained by timber or any other material by any other mode of combination. It will draw less water, probably by one third, in proportion to its length and burthen than any other boat in use; and its capacity for the accommodation of passengers will be at least equal to its improvements in other respects. It is now afloat on the water and will probably in a short time be in operation, finished and furnished in a style worthy of its character. As a description of the principles and form of this boat, in its present state of advancement, would perhaps be considered premature, it will not be attempted; and a proper time should an opportunity occur to examine it, unless previously given by some abler pen, it will be forth coming from

ARCHIMEDES.

Extract, the specification of Edward John Dent, of London, for an improvement of the balance springs of Chronometers.—Mode of preserving them from rust.

SPECIFICATION OF THE PATENT GRANTED TO EDWARD JOHN DENT, OF THE STRAND, IN THE COUNTY OF MIDDLESEX, CHRONOMETER MAKER, FOR AN IMPROVEMENT OF THE BALANCE SPRINGS, AND THEIR ADJUSTMENTS, OF CHRONOMETERS AND OTHER TIME-KEEPERS.—SEALED APRIL 23, 1830.

It is well known that the delicate spiral balance-springs of chronometers and other time-keepers, and their adjustments, are exceedingly liable to injury from oxidation or rust, both during the progress of their manufacture and when in use, and whereby they are not only subject to decay, but their rates of going or accuracy of performance is very considerably varied from time to time. Now this said oxidation or rust may either be caused by the moisture ordinarily contained in the atmosphere, especially in the sea air in voyages, or in countries particularly exposed to its action. Nor are chronometers only liable to suffer from these causes, but also from the perspired matter and the breath of the workman during the progress of their manufacture. Now it is the chief object of my invention to prevent, as far as possible, the said oxidation or rust, by coating or defending those delicate parts of chronometers with a coating or varnish, sufficiently flexible to allow the perfect free action of the balance-springs, and yet capable of preventing the action of moisture or saline and other vapours to which they are liable to be exposed. And I hereby claim as my invention, and the object of this patent, the use and application of any fit and proper flexible defensive coating or varnish to the more effectual prevention of oxidation or rust in the balance springs and adjustments of chronometers and other time-keepers. In order, however, to afford an example of the best means I am acquainted with for carrying my said invention into effect, I will describe the composition of such a varnish or coating as I have found to answer the purpose completely.

"I take half an ounce by measure of pure spirits of turpentine, and put to it forty grains of camphor, and also add ten grains of bruised gum copal to the said mixture; I then heat it nearly to its boiling point, and keep it in that state for two hours. I then filter the mixture through cotton, or other proper substance. This varnish should be kept in an air-tight bottle, closed by a glass stopper, the mouth of it being sufficiently large to admit the balance-spring and its adjustment, which are to be put into the bottle in a dry state, and free from oil or grease, and after being completely immerged in the varnish, are to be carefully drained before they are removed from the bottle. The balance-spring and its adjustment must then be placed into a temperature from 200 to 300 degrees of Fahrenheit's thermometer, and be kept therein from six to eight hours. I would remark that in place of using pure spirit of turpentine and camphor, I prefer to use half an ounce of an oil found in portable gas reservoirs, when that oil can be obtained; but as portable gas is now but little employed, and is going out of use, the materials I have above described will be found to answer well, and may be readily obtained from chemists, care being observed in obtaining pure spirits of turpentine.

(From the Genesee Farmer.)

BARTRAM BOTANIC GARDEN.

MR. TUCKER,—In conformity with my promise to you when at Rochester in the month of May, I purpose occasionally sending for your pages such matter as I may deem worthy of notice. I flatter myself the following observations respecting the first botanical establishment ever attempted in America, its founder and his successors, with its present state in the scale of Botany and Horticulture, will be acceptable to many, particularly the gardening portion of our readers.

Bartram Botanic Garden is situated on the west banks of the river Schuylkill, about three miles from Philadelphia. It was es-

tablished by that venerable and enthusiastic naturalist, John Bartram the elder, in the year 1720. The worthy founder of these gardens discovered in his early youth a love for philosophy and natural history in general. He was however particularly drawn to the study of botany from considering the importance of vegetables in the practice of medicine, and their indispensable use in various departments of human economy. But at that time botany was but little attended to in America, and in the old world the works of the great Linnæus had not appeared; he had therefore no other aid in studying the great book of nature than his own persevering genius. His view in the establishment of the garden was to make it a deposit of the vegetables of the United States, (then British Colonies,) as well as those of Europe and other parts of the world, that they might be more convenient for investigation. He soon furnished his grounds with the curious and beautiful vegetables in the environs, and by degrees with those more distant which were arranged according to their natural soil and situation, either in the garden or on his plantation which consisted of between 200 and 300 acres of land, the whole of which he termed his garden. The novelty of this horticultural scene attracted the notice of the ingenious and curious, and coming to the knowledge of Europeans, several scientific men in England, particularly of the Royal Society, united to encourage the founder to undertake journies towards the western frontiers, in order to discover and collect various non-descript productions in nature, particularly vegetables, that they might be sent to Europe.

From the Annual Oration of Robt. Carswell, Hon. M. Bartram corresponded with *Linnæus, Lord Petre, Sir Hans Sloane, Dr. Fothergill*, and many other eminent men. Linnæus said in one of his letters, that he (Mr. Bartram) was the greatest natural botanist in the world. He employed much of his time in excursions through the provinces, from the shores of Lake Ontario to the source of the river St. Juan in East Florida. He was appointed American Botanist to his Britanic Majesty George the Third, in which appointment he continued till his death in Sept. 1777, in the 76th year of his age. Mr. B. was a native of Delaware county, Penn. John, the youngest son, succeeded his father as proprietor of the Kingsess Botanic Gardens, but they were chiefly under the superintendence of his brother, Mr. Wm. Bartram, well known in the literary world by his travels in East and West Florida, the Cherokee country, &c., &c., who accompanied his father on many of his extensive botanical tours, and who seems to have inherited his unwearied zeal and vigorous capacity for that sublime science. The fame of this gentleman extended to both continents; in his sphere he was one of the most useful men in America; his knowledge was acquired by incessant bodily labor; the fields of natural science in his days were unexplored, and he resorted to the study of nature where she unfolded her works to the senses as the only true source of knowledge. To this gentleman we are indebted for the discovery of many new and rare plants, and among others the *Franklinia Alatamaha*, (Gordonia pubescens,) a beautiful tree so called in honor of Dr. Franklin. At the solicitation and expense of the celebrated Dr. Fothergill of London, he made excursions to the Floridas and to the western parts of Carolina and Georgia, in search of rare and useful productions of nature, but chiefly of the vegetable kingdom, to which gentleman he sent his collection of plants, dried specimens and drawings. The work already alluded to was the result of these travels. This work was published almost simultaneously in Germany, in Dublin, (Ireland,) and the United States.

A few minutes before the death of this enthusiastic admirer of nature, he wrote an article on the natural history of a plant, and in rising from his desk to take a morning view of the botanic grounds, he had only proceeded a few steps from the door, when he burst a blood vessel, which suddenly closed his useful life, July 22, 1823, in the 85th year of his age.

The gardens are now in the possession of Col. Carr, to whose indefatigable exertions, aided by that of Mrs. Carr, the gardens owe their present celebrity, for they are the admiration of every visitor, whether native or foreigner. Mrs. Carr is the daughter of John Bartram the younger, but to speak in just terms respecting her enthusiasm for plants, (which is only equaled by her success in their cultivation,) is a task I am incompetent to perform, for I am not possessed of words which could convey in the most remote degree the passionate fondness with which she toils among the plants, and in every department, from the earliest dawn until darkness renders her operations impracticable. Mrs. Carr's botanical acquirements place her in the very first rank among American botanists. Her knowledge of American plants is most extensive, not surpassed, if equaled, by any one in the United States. But to this lady and her uncle, Mr. Wm. Bartram, the world is under another deep debt of gratitude, for it was to the friendly conversations and instructive communications of the latter that Alexander Wilson, my countryman, first imbibed, or at all events carried his passion to such an extent for the native birds of America. To the former (Mrs. Carr) he was principally indebted for his knowledge of and his proficiency in drawing. To their combined efforts we are indebted for his American Ornithology.

In examining Bartram Botanic Garden, one characteristic feature will be obvious to the most inattentive observer, viz: the large specimens of various trees planted by John Bartram, the elder, and his son Wm. Bartram. While on a visit to the garden in the month of November, 1831, I was forcibly struck with their magnitude, (see Loudon's London Gardener's Magazine, vol. 8th, page 284) but then, and on several succeeding visits, I could not dedicate time to ascertain their exact dimensions; however, with the assistance of Mr. Carr, Jr., I have recently been enabled to gratify myself on this point, having accurately measured thirty distinct species, the dimensions of which were as follows:

No.		Circumference. feet.	inches	Height. feet.
1.	Æsculus flava,	6	4	90
2.	Ailantus glandulosa, (25 years old.)	4	2	55
3.	Andromeda arborea,	3	10	60
4.	Bignonia radicans,	3		
5.	Buxus sempervirens—*vel. variegata.*	2	6	25
6.	Castanea pumila,	2	9	
7.	Cercis canadensis,	3		35
8.	Chionanthus virginicus (one limb of.)	2	6	20
9.	Cornus florida,	2	9	30
10.	Cupressus disticha,	23	9	123
11.	Cyrilla caroliniana,	2	1	
12.	Diospyros virginica,	5	7	70
13.	Gordonia pubescens,(Franklinia)	3	8	52
14.	Gymnocladus canadensis,	5	2	80
*15.	Dirca palustris,	25	6	6
16.	Halesia tetra tera,	4	0	45
17.	Juglans laevæformis,	4	6	70
18.	Magnolia acuminate,	6	3	80
19.	—— —— auriculata,	4	1	50
20.	—— —— tripetela,	3	0	35
21.	Morus rubra,	4	1	40
22.	Pinus microcarpa,	4	4	
23.	—— picea,	5	5	85
24.	—— resinosa *vel. rubra,*	4	9	75
25.	Porcelia glabra,	1	10	30
26.	Quercus alba.	12	0	80
27.	—— heterophylla	3	9	50
*28	Rhododendron maximum,	45	0	15
*29.	Stuartia virginica,	60	0	20
30.	Thuyra occidnetalis,	3	5	40

☞ Those marked with an asterisk were measured round the branches, and the whole for the circumference were measured about 6 feet from the ground.

As before mentioned, the gardens are situated on the west banks of the Schuylkill river, about 3 miles from Philadelphia, and contain about eight acres of ground, compactly filled with the choicest ornamental trees, shrubs and herbaceous plants, properly located in their natural soils and altitudes as far as practicable. The mansion and green houses stand on an eminence, from which the garden descends by gentle slopes to the river. From the mansion are distinctly seen the winding courses of the Schuylkill and Delaware, with the broad spread of meadows and cultivated farms up and down those streams. Beyond these there is an interrupted view of the Jersey shore, from the eastern to the southern horizon. The whole comprehends an extensive prospect, rich in the beauties of its scenery and endless in diversity.

The exotic department in the garden is very extensive, and comprises the following houses,

	Length. feet.	in.	Width. feet.	in.
1. Green house,	50	0	30	0
2. Orange house, &c,	30	0	15	0
3. Geranium house,	65	0	11	6
4, Propagating house,	21	6	11	10
5. Rose house,	49	0	13	6
6. New-Holland and Stove,	68	0	14	0
7. Geraniums, roses, &c.	26	6	10	6
8 and 9. Rose Pitts,	63	0	7	0
10. Cactus house,	20	0	8	0

No expense is spared in procuring every desirable notice for the exotic department, and in the Geraniacæ, Camellicæ, and Cacteæ, this garden is particularly rich. Independent of the Botanic Garden, there is a very extensive Nursery connected with this establishment, occupying upwards of 12 acres, compactly filled with choice fruit trees, ornamental trees, shrubs, &c. Col. Carr has, by the most indefatigable exertions, imported the choicest varieties of fruit trees from the different horticultural establishments in England, France, Germany, &c. Col. C. not only imports scions of all that is rare and valuable, but also trees for immediate sale, the demand for fruit trees in the western country being much greater than the existing establishments can supply. The unwearied zeal of the proprietor renders his nursery inferior to none in the United States, as respects the variety of fruits, ornamental trees, shrubs, &c. The whole establishment does great credit to the owner, who is universally respected, but not more esteemed for his laudable exertions and correctness in the various department of his establishment, than for his amenity as a gentleman.

Immense quantities of seeds collected in this garden from the old specimens are annually exported to Europe. The garden is the resort of the Philadelphians, the casual visiter, and in fact of the tourist in general—they command universal admiration. In fact, the great variety they contain of the choicest American shrubs—the enormous magnitude of many, and the extensive collection of exotics, must prove as a source of attraction to the amateur, and an interesting field for the scientific. But to convey an idea of the estimation in which these gardens are held, I may here mention that the Philadelphia and Baltimore railroad, now constructing, as originally planned, would have gone through the very center of the gardens, and sacrificed the most splendid of the specimens, but the railroad company, with a desire to preserve them entire, altered the route at an additional expense to themselves of 10,000 dollars. Such a magnanimous act was highly meritorious, and deserves the gratitude of an American public.

Col. Carr corresponds with many scientific gentlemen in Europe, and in North and South America, consequently the garden is a depot for all that is rare and valuable.*

I am, dear sir, yours very truly,

ALEXANDER GORDON.

Philadelphia, July 3, 1837.

* It is I understand the intention of Col. Carr to dispose of the gardens, green houses, &c. Should he meet with any gentleman who would preserve them entire, or if the Philadelphia Hor. Soc. would purchase them, he would make a considerable sacrifice. To any gentleman devoted to Botany what an opportunity here presents itself, and it is sincerely to be hoped that either the Society will purchase them, or that some amateur will step forward and possess himself of this rich and charming establishment. A. G.

PRACTICAL DRAINING.

In this country, but little and very partial attention, has, as yet, been paid to the important subject of draining lands. The loss from this neglect, would, in a single year, be found to be immense, even in our cultivated districts. Land having an excess of water is comparatively good for nothing—all grain crops fail, and grass, however luxuriant it may be, is of inferior quality. This is the season of the year in which drains should be made. Information on this subject is much wanted. To supply this in part, I would direct the readers of the Railroad, to the 6th and 7th numbers of the Rural Library, published at 79 Barclay street. In these is published an excellent work, entitled The Practical Drainer, with Directions for straightening water courses, protecting river-banks, and embanking. By George Stephens. The work contains numerous engravings. I make the following extract.

From the Practical Drainer.

DRAINING.

The importance of draining, previous to the commencement of any other improvement in agriculture, being acknowledged by every cultivator of the soil, it is of the greatest consequence that these undertakings should be conducted on principles which will insure complete and permanent success. The full advantages of this primary improvement can only be obtained when it is well done. It is, indeed, the mother of all other improvements in land; and, to make it effectual, it is necessary that the qualities of the soil, the nature of the ratification, and the laws that govern the rising and running of water, should be taken into consideration. Any drainage, not conducted with due regard to these, however apparently successful at first, will, in the end, turn out a complete failure. If the work is executed in an insufficient manner, it will often be attended with more expense to remedy the evil than the first outlay, and the operations being concealed under ground, the defects cannot be discovered until a great loss has been sustained.

If landed proprietors were alive to their own interest, they would assist their tenants to ang reasonable extent, in draining on the best principles and in the most substatial anner; for, when properly executed. it is equally as aduantageous to the proprietor as to the tenant; and it must be of the highest importance that the interes of both parties should be combined, by performing the work in a complete and permanent manner, as land that is imperfectly drained can never produce crops, either in quantity or quality, equal to land that has been properly dried."

GENERAL PRINCIPLES OF DRAINING.

Wetness in land proceeds either from rain water lodging on the surface or from subterraneous water confined in the bowels of the earth, which, by its own pressure, forces itself to the surface in the form of springs. On tenacious clays that are nearly level, wetness is often produced by the first of these causes, but it much more frequently proceeds from the latter. It is necessary to be able to distinguish from which of these causes the wetness proceeds, to ensure success, (for *surface draning*, when the water is subterraneous, can only alleviate the effect, in place of removing the cause,) to accomplish which, requires no small extent of knowledge of the nature and source of springs.

The earth is composed of strata of very various kinds, which, when applied to draining, may, without regard to their other characteristics, be divided into two classes, *viz.*, *porous* and *impervious*. All those kinds of strata whose less coherent essential parts receive water freely, and through which it runs with ease, such as rotten rock, gravel, sand, and loamy clays, are called *porous*.—On the other hand, tenacious clays, and a certain kind of gravel, having a proportion of clay in its composition which, by binding the small stones together, renders it equally as impervious as clay itself, and such rock as is of a close and compact nature, without any fissures in it, are the principal strata that resist the reception of water, and are therefore called *impervious*. Springs undoubtedly originate from the rain and snow water subsiding through porous strata, till it meets an impervious stratum that prevents an obstruction to its further descent, and here forming a reservoir or considerable collection of water, it is thus forced either to filtrate along such a substance or rise to the surface, where it oozes out in those different ways that are so frequently met with. When the stratum which contains the water composes part of a hill or rising ground from which the water has descended, it will force its way to the surface wherever it finds the easiest passage; this is sometimes by a natural outlet, but often this is not apparent, and it is confined so near the surface as to injure it by constant moisture, or by oozing imperceptibly through any such pores in the soil. The great object, therefore, in draining is to cut off entirely the source of the springs of subterraneous water, which

causes the wetness, by flowing over the surface or being confined beneath it. This was discovered by Mr. Elkington, whose leading principles are, *first*, to find out where the water lies in different soils and situations, and under what circumstances; *second*, to lay out the drains so as most effectually to remove the water; *third*, to make the drains the most perfect for this purpose, either by digging alone, or by digging and afterwards boring in their bottoms with an auger—the chief object being to dry the ground effectually and at the least expense. When the subterraneous water lies at such a depth that the level of the outlet will not admit of a drain being cut so deep, or where the expense would be too great, the auger is used to make bore-holes in the bottom of the drain, through which the water rises by its own pressure.—The truth of the principles of this system of draining has been proved by the extraordinary results which have attended it, not only in this country, but in others, as will be seen by the annexed account of draining in Sweden. By it not only the land that was intended to be drained, but also springs, wells, and wet ground at a considerable distance, with which there was no apparent communication, have been made dry.* As, however, the whole de- must be obtained before any of the operations are commenced, which will be fully explained in the following details of the different cases.

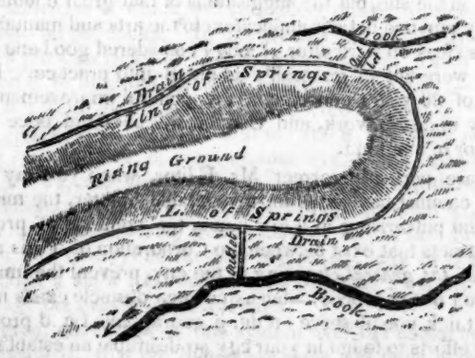
DRAINING HILLY AND SLOPING GROUNDS.

Before commencing any operation on land of the above description, it is necessary to examine the quality and inclination of the strata of the adjoining high grounds, and the connection they have with the land to be drained, in order to judge where the water lies. The best way to ascertain the inclination of the strata is, by examining the beds and banks of the nearest rivers, and any old pits and quarries in the neighborhood, and then sinking pits or boring in the ground to be drained. Rushes and other aquatic plants appearing on the surface, may facilitate the investigation, but these being also produced by stagnant water on the surface, where there is no spring, cannot be depended on in cases where more minute precision is necessary.

If the *impervious* stratum immediately under the *porous* one lies horizontally through the hill or bank, the surface of the ground below the level will be wet on both sides of the hill, and the upper side of the wet surface will be found nearly on a level all the way round. When this is the case, and the hill or bank is composed of gravel or rotten rock, a drain properly conducted along one side of the hill will carry off the water that breaks out and causes the wetness on both sides. But if the stratum of which the hill or bank is composed is a substance of a less porous nature, such as very fine sand, through which the water requires a considerable time to filtrate, the drain must be carried round the hill, near the upper side of the wetness, otherwise a complete drainage will not be obtained in wet seasons, when every part of the porous stratum is full of water. (See plan 1.)

It very frequently happens on sides of hills and sloping grounds, that several lines of springs break out and cause wetness to a considerable distance below, with intermediate spaces of dry land between them: in such cases, it is of the greatest consequence to

Plan 1.



*The author experienced a case of this kind lately in draining some fields for Lord Willoughby de Eresby, in Lincolnshire, where a well, in the possession of the tenant, about a mile distant from the operations, was completly drained.

pends upon the situation of the ground and the nature and inclination of the strata of the adjacent country, a knowledge of these

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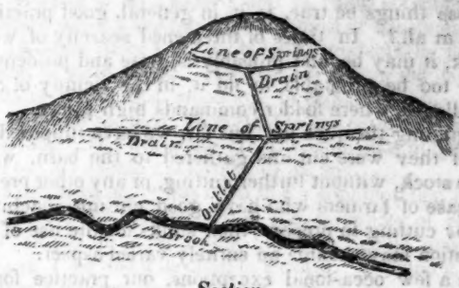
ascertain whether the water causing these lines of wetness proceeds from the same stratum or from severl distinci strata. If it is from the first of these causes, which is very seldom the case in hilly lands, the greatest quantity of water will issue from the lowest springs, and in dry season the upper ones will be dried up; in this cose the drain should be directed along the lower lrne of springs, as shewn in plan 1, which mnst be made of sufficient depth to cut off the water from the land below. When, however, the springs come from different strata, having no communication with each other, which most frequently is the case, a drain must be carried along the upper side of each line of springs, as shown in plan 2, deep enough to cut through the porous stratum, or to

Plan 2.



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free the land from superfluous moisture to such a depth as will prevent it injuring vegetation. Sometimes the upper line of springs causes the whole of the wetness below, by the water, after having run over the surface for some distance, sinking into the soil and breaking out again farther down the declivity, or where from the inclination of the ground, it may collect itself. When this happens in a steep bank, and the water gets into the loose earth, it causes the bank to slip, and it therefore is of the greatest importance that this fact should be ascertained before the commencement of the operations, as when such is the case, the drain must be made across the slope, further up than where the water makes its appearance, in the sound ground that has undergone no change; and, if it is made deep enough, the real spring will be intercepted, and the bank secured from slipping.

From the Genesee Farmer.

QUESTIONS RESPECTING THE ECONOMY OF CUTTING UP CORN—TOPPING CORNSTALKS SHOULD NOT BE PRACTISED.

It has we think been sufficiently ascertained, that when corn is injured by an early frost, cutting it up contributes nothing to its relief, and nothing to its subsequent improvement. It is we think better, in such cases, not to molest it, for unless the frost be a very deadly one, the corn will still derive nutriment from the stalks and leaves. There is another question related to this which we think merits the attention of agriculturalists. The question is this: Is it, in general, good practice to cut up corn at all, or to cut up the stalks while the ears are attached to them? We are not for war, and if we were disposed to answer this question in the negative, we should scarcely dare do it, knowing as we do that this would bring us into conflict with almost universal opinion. We will, however, suggest certain

considerations, and leave the question to be adjudicated and settled by our readers.

1 Cutting up corn at any time before the leaves are fully dead, does undoubtedly injure the crop in some degree, affecting it probably both as to quantity and quality.

2. When corn is cut up and the stalks secured in the best manner they can be, it rarely fails that some of them get down, and thus both the corn and stalks are damaged by exposure to the weather. If it were not so, the large butts and stems of the stalks are of little value for fodder, for no sort of stock will eat them, unless compelled to it by direst starvation.

3. If the stalks be left standing in the field, cattle will consume quite as great a portion of them in the field after the corn is gathered, as they would if they had been cut and gathered to the barn.

4. As materials for dung, stalks cannot be disposed of to better advantage than to be allowed to remain where they grew, and there be mixed with the soil, as is usually done by subsequent tillage.

5. Cutting up and securing a well grown crop of corn, is a heavy and toilsome labor, involving, together with the subsequent ingathering of the stalks, no trifling item of expense.

If these things be true, is it, in general, good practice to cut up corn at all? In times of threatened scarcity of winter feed for stock, it may be, and probably is, wise and prudent to do it. It may too be profitable to do it, in the vicinity of cities and large villages, where fodder commands high prices.

In agitating the question thus far, we have supposed that the stalks, if they were cut and gathered to the barn, were to be given to stock, without further cutting, or any other preparation. In the case of farmers who have good cutting machines, and intend by cutting to prepare their stalks for the use of animals, the question may assume an entirely varied aspect.

With a few occasional exceptions, our practice for several years has been, to let our corn remain unmolested, until the time of harvesting it. Sometimes we have cut up and gathered the stalks, after the corn had been separated from them. This, when corn is harvested early, can be done to advantage, and if cutting be practiced at all, we think this is the better way. More generally we have left our stalks to be depastured in the field where they grew.

The advantages of practicing as we have done, are supposed to consist, 1st. In a greater quantity and better quality of corn. 2d. In exemption from much toilsome and expensive labor. The only loss known to result from this practice, consists in the inferior quality of the stalks to be consumed as fodder. It does not appear that, as to quantity, there is any loss, for cattle will consume as great a portion of the stalks, while depasturing in the field, as they would if they had been cut, as is usually practiced, and given out in the barn yard. Neither does it appear that any thing is lost, in connection with the economy of manures. Or if there be any loss in this article, certainly it is very small.

We offer these remarks for the considerations of farmers. The question is, are the advantages which, in ordinary cases, result from cutting up corn while yet in a state of imperfect maturity, sufficient to balance the damages which it does to the crop, and the expenses of doing it?

Hitherto we have said nothing relative to the practice of topping cornstalks, which formerly prevailed almost universally, and prevails now to some extent. The economy of this practice has been the subject of so many experiments, and so much light in regard to it has of late been gained, and disseminated in the public journals, that it seems scarcely necessary to reagitate the subject. By many well conducted experiments, it has been proved most conclusively, that topping the stalks of corn, while as green as to be worth topping, essentially injures the crop, often causing a reduction equal to one fifth of its value. Among enlightened farmers, the practice of topping has fallen into general disrepute, and as it is most clearly an unprofitable practice, it should be entirely abandoned. DAN BRADLEY.

Marcellus, Feb., 1827.

From the New-York Farmer.

I have read with much attention and pleasure, the useful information contained in your late No., relative to *poudrette*. In France it is an article of great value, and a source of much profit to the companies vested with the exclusive right (disposed of at auction) of cleaning the privies in large cities.

Some sixty years ago, Paris was in a state of shocking filthiness, and the police by no means as well directed as at present. Fountains furnishing throughout the day, streams of pure and fresh water—sewers of ample dimensions (6 feet deep and 5 feet wide,) emptying into the river; companies appointed to sweep and clean the streets every evening before ten o'clock, and to make a proper disposition of the manure, were not then in existence. The streets were narrow and badly lighted, and that part of Paris, yet called the *City**, would give but an imperfect idea of what the whole metropolis was before the revolution.

M. Boursault, who had been unsuccessful on the stage of one of our minor theatres, was the first man who entertained the idea of regulating and improving the administration of this department of the police. He solicited from the Corporation the use of a piece of ground, where the daily produce of the city might be deposited until converted into good manure, his plan being founded upon free ventilation and action of the sun, required a large space of ground. He was authorised to use the *Petit Pantin* better known as *Mont faucon* and that place has since been the rendezvous of all manufactories of dangerous and disagreeable nature, horse and dog slaughter-houses, &c.

For several years M. Boursault carried on his business to the general satisfaction, and to the benefit of agriculture. he made an immense fortune which he used nobly. The garden of his Hotel in the faubourg Poissonniere, is one of the first in France, and contains a collection of roses superior to that of the Royal Garden of Plants. Open to all strangers and amateurs it is as well known as the Hotel itself, whose saloons are frequented by the most agreeable society.

M. Boursault is now 70 years of age, and is yet very active and healthy. He still retains his early theatrical predelictions, and is one of the most constant visitors on the stage of the Theatre Francais and at the Opera.

If the Corporation thought it just and fair that he who had been a benefactor to the city should be allowed to enjoy the profit of the business he had so well organized, it was reasonable that his profit should not pass entire to his successors, and since M. Boursault has left the management of the general cleansing of Paris, it is every year given to the highest bidder as you term it, and is not left to adventurers as the Editor of the Farmers' Register states.

But as in society we constantly aim at perfection, the process which has been found so useful for 40 years, has become insufficient, and a positive nuisance. While the Corporation looks for another and more remote location, science has been consulted for a process that would dispense with so many reservoirs, the emanations of which are very disagreeable, if not dangerous, and even injurious to the manure prepared.

Long ago, M. Chaptal endeavored to remedy the mode of evaporation in the sun, but the suggestions of that great chemist were then only pursued in their application to the arts and manufactures, while his ideas on agriculture, though considered good and advantageous, were not so generally admitted into practice. But the benefits of 20 years peace, and the general improvement have set many minds to work, and Chaptal will be found once more a benefactor of mankind.

You are perfectly correct Mr. Editor, when you say that a French chemist has found in a vegetable matter, the means of drying and pulverising in a few hours, the contents of privies.—The contracts that exist between the Corporation of Paris and the bilders of *the general cleansing* of the city, prevent the immediate application of the process—but as no such obstacle exists in New-York, I think you deserve credit, encouragement and protection, for your efforts to found in your city so desirable an establisment in which I wish you complete success.

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* The reader may form some notion of this Parisian five points when it is recollected, that it was built before carriages were in use.

From the Edinburgh Quarterly Journal of Agriculture for June.

The late period of receiving our foreign Periodicals prevents us from making further extracts for this number.

ON AN IMPROVED METHOD OF MAKING CLOVER-HAY.
BY MR. JOHN PROUDFOOT, INVERESK.

[The Editor says that hay making is perhaps the worst conducted operation in Scottish husbandry, and the object of the Society in offering premiums for Essays on the best method of making both clover and meadow hay, is to urge the general adoption of a superior management in securing the crop of that valuable and nutritious winter provender. It is to be hoped that the success attained by the writers of the following essays will prompt other hay makers to adopt the practice described by them. A premium of Ten Sovereigns was awarded for this essay.]

The present practice of making hay in the neighborhood where I reside (and, I believe, it is much the same throughout Scotland) is liable to many objections. The chief of these are, 1st, That of allowing the grass to be "too ripe," as it is generally called, before it is cut. 2d, Allowing the grass to be on the ground till it either be rotted with bad weather, drenched with rain, or dried up by too long exposure to the sun.

The method I have adopted for the last three years is very simple, but, in my opinion, a very secure one for our changeable climate. It is as follows:—This year (1836) I commenced cutting a field of grass of ten acres, on the 1st of July, just when the flower was going off the rye grass, which I conceive to be the true criterion for cutting. This field was sown down with 12 lb. of the best Dutch red clover, and 1 lb. of white ditto, with 2½ pecks of best Ayrshire annual rye-grass per imperial acre. It was a most excellent crop, and, as quick as five men could cut it down, women put it up close behind them in the following manner:—taking hold of the grass by the top, and placing it neatly round the left foot, keeping the foot *steady* in the heart of the handful, then tying a little band round the top, to keep it steady in the upright conical position, and when the foot is removed the aperture serves for a ventilator. Thus nearly all the surface of the grass is exposed to the air, and if the hollow cones are neatly put up, they will be almost safe from the weather, as, in case of rain, it runs off as fast as it falls.

If the weather is at all favorable the conical handfuls will be ready, in twenty-four hours, for turning out, and putting up into small cocks the same day; but they may, with greater safety be allowed to remain in the first position until ready for putting up into large cocks. I am of opinion that the less turning clover hay gets the better, as the oftener it is turned its value is deteriorated, more especially after getting rain.

One-half of the field was turned out of the handfuls, the other half allowed to remain until it was ready for being put into cocks and my manner of making cocks is this:—A man stands at the cock, to whom the women bring the handfuls, which he puts neatly up, always keeping the tops of them to the centre of the cock, in a direction sloping upwards, from him, so as the slope may shew off the rain. In thus carefully constructing the cock little vacuities will be left *between* the handfuls to act as ventilators, the influence of which will very soon render it proper to put the hay into larger cocks. In one week I had all the hay of the ten acres put into ricks of 130 or 140 stones, in which state I conceived it to be proof against *any* kind of weather,—indeed, were it not that purchasers were expected to take it "*off the risk*," it might have been put into the stack. I may mention, that the rain fell less or more almost every day, excepting on Sunday the 3d, and Monday the 4th, but on the 5th there was a severe thunder storm, *and notwithstanding this most unpropitious weather, I made nearly 4000 stones of hay in the finest condition, in one week from the time it was cut; and as to its quality,* I think I am not too bold when I say, that I am not afraid to challenge the county of Edinburgh.*

The great advantage of this system over the common one in a bad season is, that *one* hour's sunshine will have more effect in drying the hay than a whole day! I have this year seen hay lying on the ground for weeks together, and the aftermath growing up through it, which is destructive both to the hay and the second crop; but if the system which I have described *be followed out*, I will venture to say that the hay will not only be infinitely superior, *but in the end will be put up at less expense* than in the old system, under the most favorable circumstances.

I have also converted the second crop into hay over the same ground with equal success, notwithstanding the bad weather, and all the obstacles incidental to making a second crop of good hay.

* Testimonials of the superior quality of the hay were furnished to the Society by the author, from Sir John Hope of Pinkie, and William Aitchison, Esq. younger of Drummore.

HOW TO IMPROVE A POOR FARM.

RICHARD A. LEONARD, of Middletown, N. J. has furnished us an interesting account of his manner of improving a worn-out farm, and of the sale of its products the last year; and we regret that from the great accumulation of matter on hand, we cannot give his letter in detail. We are obliged to content ourselves with a brief abstract of material facts.

Mr. Leonard came into possession of 90 acres of cultivated but exhausted land, in May, 1833. In that year the sale of its products amounted to $550,88; in 1834 the sale amounted to $718,05; in 1835 to $1,125,04; and in 1836, notwithstanding the unfavorable season, and the failure of most of his staple crops, to $1,166 13—thus more than doubling its products, by judicious management, in three years. His expense during the last year, for labor, dung and freight, amounted to $254.72—thus leaving him a nett profit on the farm, of $912,41—or more than $10 per acre per annum. We will quote Mr. L's. statement of the means he adopted to thus double the fertility of his soil.

"My farm," says he, "was in so low a condition that it would not produce more than ten bushels of rye, or twenty of corn per acre; and as I had no other income but what I could make upon this poor farm I set about farming in earnest. I found it was in vain to attempt improvement without manure, so I contrived to get about 400 loads a year, 300 of which I made in the following manner. I have marl, though of very inferior quality. I cart about 100 loads of this into my barn yard, and by yarding my cattle upon it through the season, contrive to increase it to 200 loads. I also cart about 50 loads to my hog pen, on which I keep my hogs the year round. In this way I got 100 loads more, which is excellent for potatoes, corn, &c., and as my farm is situate near the bay, I obtain from New-York, annually, from 50 to 75 loads of the best stable dung, at about $1 per load on delivery, and by mixing it with the earth, &c., make up the 400 loads. By this treatment I find my land improve rapidly, and my income in like proportion. But I am sorry to say there are many farmers among us who are still pursuing the old land-killing system, scarcely making both ends meet. I might say something concerning the beneficial results of under draining, and of lime as a manure; but I conclude for the present."

This communication affords a worthy example of prudent industry and good management, and shows that even a poor farm, well managed, may be rendered more productive than many a good farm now is under bad management.—[Cult.]

ROOT CULTURE.

The root, and particularly the turnip culture, which has been extolled as the basis of improved husbandry in Great Britain, is rapidly extending among us; and we confidently anticipate from it the best practical results. Five years ago there was not probably two hundred pounds of ruta baga seed sown in the state: this year tons of this seed have been sown; and the culture of mangold wurtzel and carrots, has been also greatly extended. One seedsman has imported 26 cwt. of ruta baga seed, and this probably has not been more than a quarter, or a third, that has been sown. The supply has been exhausted, from Baltimore to Boston, and yet the demand has not been supplied. Our neighbor, Thorburn, has sold this season 1,500 lbs. ruta baga seed; 150 lbs carrot do.; 100 lbs parsnip do.; and 150 lbs. mangold wurzel do.; and, as indicating the extended culture of roots, and the advance of agricultural improvement, we add, that he has also retailed seventy cultivators; eighty drill-barrows; and seventy-five of Green's straw-cutters. We record these facts as affording, in our mind, substantial proofs of a propitious change, and of the efforts to improve, which are

now being manifested in our agricultural community. And from the spirit of inquiry which is abroad, and the general circulation of agricultural periodicals, we hazard little in saying, that the rising generation will be better farmers, and more enlightened men, than their fathers have been. Let every young farmer ponder upon these facts, and to stimulate him to honorable exertion, let him remember, that he who aims to excel, will at least attain mediocrity; while he who aims at mediocrity, will generally fall short of it. Cultivate the mind, as the sure means of increasing the profits of the hands.—[Cultivator.]

(From the Cultivator.)

THE WOOL MARKET.

As clipping time is near at hand, I have thought some remarks on the subject of wool would not be uninteresting to those who are engaged in sheep husbandry. I am largely interested myself, and with a view of learning the actual state of the market, I have just visited many of the manufacturing towns of Connecticut and Massachusetts.

In consequence of the extensive failures or suspensions of many of the large commission houses in New-York, the manufacturers were more or less embarrassed. The losses of some were so great as to cause a failure, while others, witnessing the the storm around them, immediately stopped their mills and discharged their hands. The great majority of woollen mills are of this class, who stopped from expediency, more than necessity. They have worked all their wool and finished all their goods, and only wait for a change of times to start their machinery again.

Nearly every mill has on hand the cloths manufactured in the last four months, and they will not be sent to market till the fall sales commence, when fair prices will doubtless be obtained.

The stock of domestic woollen goods in Philadelphia, New-York, or even in the country, is not large. There is no difficulty from an over supply. It is well known that there will be few or no woollen goods imported this season, and our own manufacturers will have the entire benefit of the market.

The present state of affairs prevents the importation of either wool or woollen goods. The duties are required to be paid in *cash*, when imported, which now amount to almost prohibition. Indeed, since the bursting of the credit-system, as practised by importers, goods will hereafter, from necessity, be imported for cash cash.

All these things will eventually help our manufacturers, by giving them the market of this country, quite as effectually as by an extensive tariff or duties.

June, 1837. Yours, &c. OSTEGO.

From the Cultivator.

THE HARVEST PROSPECT, has brightened surprisingly within the last six weeks. In the valley of the Mohawk, through which we have recently passed, we never saw crops look more propitious to the hopes of the farmer, than they now do, considering the backwardness of the season. The wheat, there, stands pretty well, and were it not for apprehensions from the grain worm, the prospect would be that of a good crop. Many of our readers abroad identify this insect with the hessian fly, and others with the wevil. It is neither. The hessian fly preys upon the stock of the wheat; the wevil upon the ripened grain, in the barn or in the bin; the grain worm destroys the wheat in the germ or milk. The spring grain and grass look very well, where any attention has been given to draining; and even Indian corn, though got in late, has come up well, and is of a good color. There has been an abundance—an excess of rain; and although "spring lingered long in the lap of winter," yet the warm weather in the last of and first of June has caused such a luxuriant growth, that if the coming month is favorable, and the nipping frosts of autumn are delayed, the corn crop will yet be a tolerable good one. The prospect of the crops farther west, we are happy to learn, is epually flattering. Abundant crops will do more to mitigate present evils, than a hundred banks. The truth is, that as a national family, we bought sixty-four millions of dollars more last year than we sold—and the sixty-four millions balance must be paid before we can have easy times—*must be paid from the profits of agriculture*. Banks enrich individuals—good crops the country—the whole country. Then let us "speed the plough," and honor and instruct those who guide it.

POUDRETTE COMPANY, or *Cleanliness, Health* and *Economy*. A Company will be organized in a few days, for the purpose of preparing this valuable manure. One of the main objects of the Company is to introduce an improved, or far less offensive mode of emptying sinks in this city.

The improvement consits in removing the contents *without exposure to the atmosphere, while on the way from the yard to the cart*, or *to the place of deposite*—and also avoids, and will *prohibit* the present practice of throwing 40 or 50 loads of filth *into the river every night*.

Shares in the Company are One Hundred Dollars each.—Every Subscriber will be entitled to appropriate as many bushels of manure annually, at *half the market price*, as he may subscribe dollars.

Those who may prefer not to subscribe to the company, and yet desire to contribute to its success, can do so by depositing *ten* or *twenty* dollars with the agent, which amount will be placed to the credit of the depositor, and entitle him to the services of the company in emptying sinks, at *five* cents the cubic foot, until the amount is thus balanced.

Information will be given, and subscriptions received, at the office of the NEW-YORK FARMER, No. 30 Wall-street, *basement story*.

☞ The Company *is now* organized. The chemical, and manufacturing department, will be under the care of Peter Barthelemy, Esq, who introduces the improved plan. The business generally, will be under the care of D. K. Minor, at the office of the *New-York Farmer*.

*** The last few numbers of the New-York Farmer contain several articles in relation to its use and value in *Europe*.

D. K. MINOR.

New-York, July 19, 1837.

Advertisements.

GEORGE HALL.—Information is wanted of George Hall of the city of New York, who left Newburgh last September; if this should meet his eye, he will hear of something to his advantage, by addressing a letter to his Sister *Jane Hall*, 46 Oak street, New York.—Any information concerning him, will be thankfully received by his Brothers and Sisters as above directed.

New-York, June 15th, 1837.

THIRD ANNUAL FAIR OF THE MECHANICS' INSTITUTE OF THE CITY OF NEW-YORK.

The *Fair* of the Institute will be held at Niblo's Garden, commencing Monday, September 25th, 1837.

To render this exhibition worthy of the arts and of the ingenuity of the Mechanics of our country, the Managers appointed to conduct the approaching *Fair* have determined to make such liberal arrangements as will insure to the contributors a fair opportunity of exhibiting their productions to the greatest advantage.

The object of Exhibition Fairs is to present to the members of the Institute and their fellow citizens who are engaged in the Mechanic Arts, the means of making their skill and ingenuity known in a way no other facilities afford: the many thousands who visit such exhibitions have a much better opportunity of judging of the merits of the various productions, than they would have by a mere verbal or newspaper description, besides the advantage of seeing brought together, in one vast collection, the products of the skill, ingenuity, and industry of our country.

PREMIUMS of Medals, Diplomas, &c. will be awarded for *all* worthy or meritorious articles exhibited, either as it respects superior workmanship, machinery wherein the operations are new, interesting or important, where ingenuity is displayed, or taste manifested, and particularly for all new and useful inventions.

You are respectfully requested to send, for competition or exhibition, specimens of the articles you manufacture; and you may be assured that the strictest impartiality will be observed in the distribution of the Premiums.

Steam power will be provided for the accommodation of those who wish to exhibit Machinery in operation; an experienced Superintendant will take charge of this department, and contributors in this branch are particularly invited to send or bring their Machines or models as early as possible, on the 23d Septembe

that the necessary arrangements may be made in relation to shafting, pullies, &c.

The Managers, in conclusion, cannot but express their belief that this Third Fair of the Mechanics' Institute, will exceed in variety and beauty of display, all previous exhibitions of the kind.

GEORGE BRUCE, *Chairm.*,
WM. EVERDELL,
C. CROLIUS, JUN.
THOS. EWBANK,
RICHARD BRAGAW,
} *Executive Committee.*

N. B. All articles for competition must be delivered to the Committee at Niblo's Garden, on the 23d September. Those for exhibition *only* will be received any day during the Fair, before 10 o'clock A. M.

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RULES AND REGULATIONS.

1.—The Garden will be opened for the reception of Goods, on Saturday, 23d of September, from 6 o'clock A. M. until 9 o'clock P. M., and it is respectfully urged that all articles intended for competition may be sent in early in the day. Those articles intended for exhibition *only* will be received any day during the Fair, before the hour of 10 A. M.

2.—The Fair will open for visitors on Monday, 25th Septem- at 10 o'clock A. M., and continue open every day of the exhibition till 10 o'clock P. M.

3.—Competent and impartial Judges will be appointed to examine all articles presented, and premiums will be awarded on all such as shall be declared worthy.

4.—The Committee on Premiums, and all firms or partnerships in which they may be interested, shall be excluded from competition or the award of any premium.

5.—All persons depositing articles, either for competition or exhibition, must attend to have them registered by the Clerk, at which time they will receive a certificate, which will be required of them when the articles are returned.

6.—Proof of origin must be furnished if required, for any specimen offered for Premium.

7.—Depositors will receive a ticket from the Clerk, which will admit them and Ladies during the Exhibition.

8.—Arrangements will be made to exhibit, in operation, all working models that may be deposited—contributions in this branch are invited—a competent person will take charge of all models sent for the above purpose.

9.—The morning of each day, until fifteen minutes before 10 o'clock, shall be appropriated exclusively to the Judges.

10.—Members will receive their tickets of admission by applying at the Institute Rooms, any time in the week previous to and during the exhibition.

11.—All articles offered by Apprentices, will be received, and adjudged as the production of Apprentices—they must furnish a certificate of name, age, with whom, and the time they have served as apprentices.

12.—Articles subject to injury by being handled, should be secured in glass cases—and contributors are requested to have a person to take charge during the hours of exhibition—in the intervals, efficient measures will be taken to protect property.

GENERAL COMMITTEE.

George Bruce,	John Ridley,
John M. Dodd,	Silas B. Simonson,
James J. Mapes,	Thomas F. Peers,
Thomas Ewbank,	Thomas G. Hodgkins,
Wm. Everdell,	George L. Spencer,
C. Crolius, Jr.,	Peter Wemmell,
A. J. Mason,	Richard Bragaw,
Thos. W. Bartholomew,	Ab'm Peitch,
A. Storms,	Wm. H. Hale,
Wm. Ballard,	Wm. J. Mullen,
Henry Cunningham,	James Thomson,
John Harold,	Abner Mills,
Joseph Trench,	L. D. Chapin,
James D. Phyfe,	A. Cammeyer,
John H. Mead,	Hiram Tupper,
John Conroy,	H. B. Robertson,
Jordan L. Mott,	James Thomas,
Samuel arter,	H. G. Stetson,
George F. Nesbitt,	Ferris Owen,
Henry Worrall,	N. Berry,
W. B. Worrall,	O. Whittelesey,
James B. Cummings,	M. W. Emmons,
James Frost,	J. S. Anderson.

TRANSACTIONS OF THE INSTITUTION OF CIVIL ENGINEERS OF GREAT BRITAIN.

The first volume of this valuable work, has just made its appearance in this country. A few copies, say *twenty-five* or *thirty* only, have been sent out, and those have nearly or quite all been disposed of at *ten dollars* each—a price, although *not* the *value* of the work, yet one, which will prevent many of our young Engineers from possessing it. In order therefore, to place it within their reach, and at a convenient price, we shall *reprint* the entire work, with ll its enagravings, *neatly done* on wood, and issue in six *parts* or *numbers*, of about 48 pages each, which can be sent to any part of the United States by mail, as issued, or put up in a volume at the close.

The price will be to subscribors *three dollars*, or *five dollars* for two copies—*always in advance*. The first number will be ready for delivery early in April—Subscriptions are solicited.

AVERY'S ROTARY STEAM ENGINES.—AGENCY.—The subscriber offers his services to gentlemen desirous of procuring Steam Engines for driving SAW-MILLS, GRAIN-MILLS, and OTHER MANUFACTORIES of any kind.

Engines only will be furnished, or accompanied with *Boilers* and the necessary *Machinery* for putting them in operation, and an Engineer always sent to put them up.

Information will be given at all times to those who desire it, either by letter or by exhibiting the engines in operation in this city.

Inquiries by letter should be very explicit and the answers shall be equally so.

D. K. MINOR,
30 Wall-st., New York.

FOR SALE AT THIS OFFICE,

A Practical Treatise on Locomotive Engines, with Engravings, by the CHEVALIER DE PAMBOUR—150 pages large octavo—done up in paper covers so as to be sent by mail—Price $1 50. Postage for any distance *under* 100 miles, 40 cents, and 60 cts. for any distance exceeding 100 ms.

ALSO—*Van de Graaff on Railroad Curves*, done up as above, to be sent by mail—Price $1. Postage, 20 cents, or 30 cents, as above.

ALSO—Introduction to a view of the works of the *Thames Tunnel*—Price *fifty cents*. Postage as above, 8 cents, or 12 cts.

*** On the receipt of $3, a copy of each of the above works will be forwarded by mail to any part of the United States.

DRAWING INSTRUMENTS.—E. & G. W. Blunt, 154 Water-street, New-York, have received, and offer for sale, Drawing Instruments of superior quality, English, French, and German Manufacture.

They have also on hand Levels of superior quality at low prices.

☞ Orders received at this office for the above Instruments.

☞ TO RAILROAD COMPANIES.

A PERSON experienced in the construction of Locomotive Engines (many of his Manufacture being in successful operation on important Railroads in the United States) and who is likewise thoroughly acquainted with the management of such machines, and, indeed, the entire ordeal of Railroads, is desirous of obtaining the situation of General Superintendant on some Railroad, South or West.

The most satisfactory testimonials of character and capability can be produced. Communications addressed to the Editors of this Journal, stating the location of Road, &c. will meet with prompt attention.

9t—24

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE.—Is published *semi-monthly*, at No. 30 WALS-ST., *basement story*, at *Three Dollars* a-year, *in advance*, by D. K. MINOR & GEO. C. SCHAEFFER.

RAILWAY IRON, LOCOMOTIVES, &c

THE subscribers offer the following articles to sale.

Railway Iron, flat bars, with countersunk holes and rattered joints,

					lbs.
350 tons	2½	by	1,	15 ft in length, weighing	47.50/100 per ft
230 "	2	"	¼,	" " "	39.50/100 "
70 "	1¼	"	¼,	" " "	21 "
80 "	1¼	"	¼,	" " "	17.25/100 "
90 "	1	"	¼,	" " "	14 "

with Spikes and Splicing Plates adapted thereto. To be sold free of duty to State governments or incorporated companies.

Orders for Pennsylvania Boiler Iron executed.

Rail Road Car and Locomotive Engine Tires, wrought and turned or unturned, ready to be fitted on the wheels, viz 30, 33, 35, 42, 44, 54, and 60 inches diameter.

E. V. Patent Chain Cable Bolts for Railway Car axles, in lengths of 12 feet 6 inches, to 13 feet 2½. 2¾ 3, 3¼. 3½. 3¾, and 3¾ inches diameter.

Chains for Inclined Planes, short and stay links, manufactured from the E. V. Cable Bolts, and proved at the greatest strain.

India Rubber Rope for Inclined Planes, made from New Zealand flax.

Also Patent Hemp Cordage for Inclined Planes, and Canal Towing Lines

Patent Felt for placing between the iron chair and stone block of Edge Railways

Every description of Railway Iron, as well as Locomotive Engines, imported at the shortest notice, by the agency of one of our partners, who resides in England for this purpose.

A highly respectable American Engineer, resides in England for the purpose of inspecting all Locomotives, Machinery, Railway Iron &c. ordered through us

A. & G. RALSTON & CO.,
28 tf Philadelphia, No. 4, South Front street

ARCHIMEDES WORKS.

(100 North Moor street, N. Y.)
New-York, February 12th, 1836

THE undersigned begs leave to inform the proprietors of Railroads that they are prepared to furnish all kinds of Machinery for Railroads, Locomotive Engines of any size. Car Wheels, such as are now in successful operation on the Camden and Amboy Railroad, none of which have failed—Castings of all kinds, Wheels, Axles, and Boxes, furnished at shortest notice.

4—yll H. R. DUNHAM & CO.

MACHINE WORKS OF ROGERS, KETCHUM AND GROSVENOR, Paterson, New Jersey.

The undersigned receive orders for the following articles, manufactured by them, of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and despatch

RAILROAD WORK.

Locomotive Steam-Engines and Tenders; Driving and other Locomotive Wheels, Axles, Springs and Flange Tires, Car Wheels of cast iron, from a variety of patterns, and Chilled Car Wheels of cast iron, with wrought Tire, Axles of best American refined iron, Springs, Boxes and Bolts for Cars.

COTTON WOOL AND FLAX MACHINERY,

Of all descriptions and of the most improved Patterns, Style and Workmanship.

Mill Gearing and Millwright work generally; Hydraulic and other Presses; Press Screws; Calliendors; Lathes and Tools of all kinds. Iron and Brass Castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR
Patterson, New-Jersey, or 60 Wall street, N. York
5tf

TO RAILROAD CONTRACTORS.

PROPOSALS will be received, at the office of the Hiwassee Railroad Com., in the town of ATHENS, Tennessee, until sunset, on Monday, June 12th, 1837, for the grading, masonry and bridges, on that portion of the HIWASSEE RAILROAD, which is between the river Tennessee and Hiwassee. A distance of 40 miles.

The quantity of excavation will be about one million of cubic yards.

The line will be staked out; and, together with drawings and specifications of the work, will be ready for the inspection of contractors, on and after the 1st day of June.

JOHN C. TRAUTWINE,
Engineer in Chief Hiwassee Railroad
16—6t.

FRAME BRIDGES.

THE undersigned, General Agent of Colonel S. H. LONG, to build Bridges, or vend the right to others to build, on his Patent Plan, would respectfully inform Railroad and Bridge Corporations, that he is prepared to make contracts to build, and furnish materials for superstructure of the kind, in any part of the United States, (Maryland excepted.)

Bridges on the above plan are to be seen at the following localities, viz. On the main road leading from Baltimore to Washington, two miles from the former place. Across the Metawamseag river on the Military road, in Maine. On the national road in Illinois, at sundry points. On the Baltimore and Susquehanna Railroad at three points. On the Hudson and Patterson Railroad, in two places. On the Boston and Worcester Railroad, at several points. On the Boston and Providence Railroad, at sundry points. Across the Contoocook river at Henniker, N. H. Across the Soukegan river, at Milford, N. H. Across the Connecticut river, at Haverhill, N. H. Across the Contoocook river, at Hancock, N. H. Across the Androscoggin river, at Turner Centre, Maine. Across the Kennebec river, at Waterville, Maine. Across the Genesee river, at Squaki hill, Mount Morris, New-York. Across the White River, at Hartford Vt. Across the Connecticut River, at Lebanon, N. H. Across the mouth of the Brockway Straw Creek, Erie Co. Across the mouth of the Canaseraga Creek, N. Y. A Railroad Bridge diagonally across the Erie, Canal, in the City of Rochester, N. Y. A Railroad Bridge at Upper Still Water, Orono, Maine. This Bridge is 550 feet in length; one of the spans is over 200 feet. It is probably the FIRMEST WOODEN BRIDGE ever built in America.

Notwithstanding his present engagements to build between twenty and thirty Railroad Bridges, and several common bridges, several of which are now in progress of construction, the subscriber will promptly attend to business of the kind to much greater extent and on liberal terms. MOSES LONG.

Rochester, Jan 13th, 1837. 4—y

ALBANY EAGLE AIR FURNACE AND MACHINE SHOP.

WILLIAM V. MANY manufactures to order IRON CASTINGS for Gearing Mills and Factories of every description

ALSO—Steam Engines and Railroad Castings of every description.

The collection of Patterns for Machinery, is not equalled in the United States 9—1y

NEW ARRANGEMENT.

ROPES FOR INCLINED PLANES OF RAILROADS

WE the subscribers having formed a co-partnership under the style and firm of Folger & Coleman, for the manufacturing and selling of Ropes for inclined planes of railroads, and for other uses, offer to supply ropes for inclined planes, of any length required without splice, at short notice, the manufacturing of cordage, heretofor carried on by S. S. Darrie & Co., will be done by the new firm, the same superintendant and machinery are employed by the new firm that were employed by S. S. Darrie & Co. All orders will be promptly attended to, and ropes will be shipped to any port in the United States.

12th month, 12th, 1836 Hudson, Columbia County State of New-York

ROBT. C. FOLGER,
33—tf GEORGE COLEMAN.

AMES' CELEBRATED SHOVELS, SPADES, &c.

300 dozens Ames' superior back-strap Shovels
150 do do do plain do
150 do do do cast steel Shovels & Spades
150 do do Gold-mining Shovels
100 do do plated Spades
50 do do socket Shovels and Spades.

Together with Pick Axes, Chain Drills, and Crow Bars (steel pointed,) manufactured from Salisbury refined iron—for sale by the manufacturing agents,

WITHERELL, AMES & CO.
No. 2 Liberty street, New-York
BACKUS, AMES & CO.
No. 8 State street, Albany

N. B.—Also furnished to order, Shapes of every description, made from Salisbury refined iron v4—tf

STEPHENSON,

builder of a superior style of Passenger Cars for Railroads.

No. 264 Elizabeth street, near Bleecker street, New-York

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlaem Railroad now in operation. 1254, 3

PATENT RAILROAD, SHIP AND BOAT SPIKES.

*** The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation, and now almost universal use in the United States, (as well as England, where the subscriber obtained a patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersunk heads suitable to the holes in iron rails to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

*** All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y., July, 1831.

*** Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New York: A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degraad & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes (1323am) H. BURDEN.

TO CONTRACTORS.

JAMES RIVER AND KANAWHA CANAL.

THERE is still a large amount of mechanical work to let on the line of the James River and Kanawha Improvement, consisting of twenty locks, about one hundred culverts and several large aqueducts, which will be offered to responsible contractors at fair prices.

The locks and aqueducts are to be built of cut stone

The work contracted for must be finished by the 1st day of July, 1838

Persons desirous of obtaining work are requested to apply at the office of the undersigned in the city of Richmond, before the fifteenth of May, or between the fifth and the fifteenth of July

CHARLES ELLET, Jr.
Chief Engineer Jas. Riv. & Ka. Co.

P. S.—The valley of James river above Richmond is healthy.

16—10t

TO RAILROAD CONTRACTORS.

SEALED proposals will be received at the office of the Selma and Tennessee River Railroad Company, in the town of Selma, Alabama, for the grading of the first forty miles of the Selma and Tennessee Railroad. Proposals for the first six miles from Selma, will be received after the first of May, and acted on by the Board on the 15th May. Proposals for the ensuing 34 miles, will be received after the 10th May, and will not be examined until the 1st of August next, when the work will be ready for contract.

The line, after the first few miles, pursuing the flat of the Mulberry Creek, occupies a region of country, having the reputation of being highly healthful. It is free from ponds and swamps, and is well watered. The soil is generally in cultivation, and is dry, light and sandy, and uncommonly easy of excavation.—The entire length of the line of the Selma and Tennessee Railroad, will be about 170 miles, passing generally through a region as favorable for health as any in the Southern Country

Owing to the great interest at stake in the success of this enterprise, and the amount of capital already embarked in it, the work must necessarily proceed with vigor, and it will receive the attention of men of industry and enterprise, both at the North and at the South, where this undertaking, as offering in the prospect of continued employment, and the character of the soil and climate, a wide and desirable field to the contractor.

Proposals may be addressed either to the subscriber, or to General Gilbert Shearer, President of the company

ANDREW ALFRED DEXTER, Chief Engineer
Selma, Ala., March 20th, 1837. 15tf

ROACH & WARNER,

Manufacturers of OPTICAL, MATHEMATICAL AND PHILOSOPHICAL INSTRUMENTS, 205 Broadway, New York, will keep constantly on hand a large and general assortment of Instruments in their line.

Wholesale Dealers and Country Merchants supplied with SURVEYING COMPASSES, DRAUGHTERS, THERMOMETERS, &c. &c. of their own manufacture, warranted accurate, and at lower prices than can be had at any other establishment.

Instruments made to order and repaired by 1f